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## THE LAKES-TO-THE-GULF DEEP WATERWAY. III

### VII. BOAT AND RAIL RATES, INSURANCE, AND TERMINAL CHARGES

The construction of a waterway from the lakes to the Gulf is commonly advocated on two grounds, namely: (1) that the cost of freight shipment by the waterway would be less than the present rail rates, and (2) that the water competition thus established would reduce the rail rates and serve as a means of rate regulation. It is widely believed that the rates would be reduced sufficiently to justify the expense of constructing the waterway.

The present boat and rail rates,<sup>1</sup> insurance, and terminal charges are presented here in order that a comparison may be made between the cost of shipment by rail and that by river. Later an attempt is made to show why the shipper chooses either the rail or the river route, and to present the conditions that affect freight movement so clearly that the reader may arrive at his own conclusions as to the benefits to be derived from an improved channel. The boat rates applicable to class freight are first presented for the several stretches of the river, including rates at all river landings. Then a comparison of boat with rail rates between the more important competitive points is made.

<sup>1</sup> The boat rates tabulated are as complete rates as the writer could obtain. The chief sources of authority are the tariffs of the boat lines operating on the several sections of the route and the river tariffs of the Railroad Commission of Louisiana. Appendix X of the *Annual Report of the Chief of Engineers* for 1910 was an aid in the preparation of certain of the tables. The rail rates were obtained from the Illinois Central Railroad Company.

Table XVIII shows the class rates between St. Louis and points on the Mississippi and Illinois rivers as far as Peoria, Ill.<sup>1</sup>

The table shows that higher rates are in effect between St. Louis and points located between St. Louis and Peoria, than between St. Louis and Peoria. That is, higher rates are charged for a short haul than for a longer one over the same route. The points at which the higher rates apply are those at which the boat lines meet little or no rail competition. Calhoun County,

TABLE XVIII

CLASS RATES BETWEEN ST. LOUIS AND POINTS ON THE ILLINOIS RIVER VIA THE MISSISSIPPI AND ILLINOIS RIVERS

| BETWEEN ST. LOUIS, MO., AND                  | RATES IN CENTS PER<br>HUNDRED POUNDS* |    |    |    |    | DISTANCE<br>(Miles) |
|--|---------------------------------------|----|----|----|----|---------------------|
|  | Classes                               |    |    |    |    |                     |
|  | 1                                     | 2  | 3  | 4  | 5  |                     |
| Alton, Ill.†                                 | 18                                    | 15 | 13 | 10 | 8  | 23                  |
| Grafton and Elsah, Ill.‡                     | 25                                    | 20 | 15 | 13 | 10 | 40                  |
| Points between Beardstown and Grafton§       | 35                                    | 28 | 20 | 15 | 13 | 42-132              |
| Pittsfield and Griggsville, Ill.¶            | 40                                    | 30 | 25 | 20 | 18 | 100-110             |
| Perry, Ill.¶                                 | 50                                    | 35 | 30 | 25 | 20 | 140                 |
| Peoria, Pekin, Havana, and Beardstown, Ill.‡ | 30                                    | 25 | 20 | 15 | 13 | 181-233             |

\* Governed by the Illinois Classification. No rates are published for the classes 6-10.

† Minimum charge 25 cents.

‡ Minimum charge 35 cents.

§ Minimum charge 50 cents.

¶ Minimum charge 50 cents. These points are not immediately on the river.

situated between the Illinois and Mississippi rivers, above Grafton, is not served by a single railway. It would seem that this narrow county served on both borders by waterways would be exceptionally favored by low freight rates. The shippers of this county, however, pay more for shipping freight to and from St. Louis, a distance of from 40 to 70 miles, than the shippers at Peoria pay for a distance of 233 miles via the same river. It would seem that if river shipping

<sup>1</sup> They were obtained from a rate sheet furnished by Mr. H. W. Leyhe of the Eagle Packet Company, and were in effect in April, 1911, subject to change without notice. In the rate tables fractions less than  $\frac{1}{2}$  cent are disregarded, and those of  $\frac{1}{2}$  cent and more are written as an additional unit. The distances were taken from a passenger folder of the company.

were prohibited, it might be a boon to this county. For if there were no water competition, steam or electric railways would probably be built. If this were done, the Illinois distance rates that would apply between St. Louis and the most distant point in the county are shown in the following scale in comparison with the present boat rates. The Illinois distance rates are still less for the shorter distances, hence the differentials would be still greater for the nearer points.

|   | RATES IN CENTS PER HUNDRED POUNDS |      |      |      |      |     |     |     |     |     |
|---|-----------------------------------|------|------|------|------|-----|-----|-----|-----|-----|
|   | Classes                           |      |      |      |      |     |     |     |     |     |
|   | 1                                 | 2    | 3    | 4    | 5    | 6   | 7   | 8   | 9   | 10  |
| Boat rates.....                           | 35                                | 28   | 20   | 15   | 13   | *   | ... | ... | ... | ... |
| Illinois distance rates for 70 miles..... | 26.3                              | 21.8 | 18.4 | 12.8 | 10.2 | 9.9 | 9.5 | 7.7 | 6.1 | 5.5 |
| Differentials.....                        | 8.7                               | 6.2  | 1.6  | 2.2  | 2.8  | ... | ... | ... | ... | ... |

\* No class rates published by the boat lines for classes 6-10.

Table XIX shows the class rates on the section of the Mississippi River between St. Louis, Mo., and New Orleans, La. The rates are those of the Lee Line except where reference is made to the Mississippi Valley Transportation Company. Two features of the rate structure on the Mississippi are manifest in the table. (1) The same rates apply over stretches of the river. The rate is the same from St. Louis to the first regular landing as from St. Louis to Cairo. The same rate is also applied on shipments moving from one landing to another anywhere between St. Louis and Cairo. There is no advancing scale based on distance. (2) The charge is frequently more for a short haul than for a longer one. For example, the rates are higher between St. Louis and the first outside landing below than between St. Louis and Cairo, higher from St. Louis to points above Memphis than to Memphis. In general the rates for short distances between non-rail points are as high as for longer distances between rail points, and frequently they are higher. In contrast with the structure of the boat rates as presented above, the railways usually relate their rates more closely to distance, and they are not allowed to charge more for

a short than for a longer haul over the same route except by special permission from the commission. The rail rates between St. Louis

TABLE XIX

CLASS RATES ON THE SECTION OF THE MISSISSIPPI RIVER BETWEEN  
ST. LOUIS AND VICKSBURG

| BETWEEN ST. LOUIS, MO.,<br>AND POINTS NAMED BE-<br>LOW, EXCEPT AS OTHER-<br>WISE NOTED                          | RATES IN CENTS PER HUNDRED POUNDS* |    |    |    |    |    |    |    |    |    |    |    | PER<br>BBL. | Dis-<br>TANCE<br>(Miles) |
|---|------------------------------------|----|----|----|----|----|----|----|----|----|----|----|-------------|--------------------------|
|   | Classes                            |    |    |    |    |    |    |    |    |    |    |    |             |                          |
|   | 1                                  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |    |    |             |                          |
| Landings below St.<br>Louis, not below<br>Cairo. (1) Regular<br>landings.....                                   | 25                                 | 20 | 18 | 14 | 10 | 10 | 9  | 8  | 7  | 6  | .. | .. | ..          | 176                      |
| (2) Way landings...   | 30                                 | 24 | 22 | 17 | 12 | 12 | 11 | 10 | 8  | 7  | .. | .. | ..          | .....                    |
|   | 1                                  | 2  | 3  | 4  | 5  | 6  | A  | B  | C  | D  | E  | H  | F           |                          |
| Regular landings below<br>Cairo, not below<br>Columbus, Ky.†....  | 30                                 | 23 | 18 | 14 | 14 | 12 | 10 | †  | .. | .. | .. | .. | ..          | 197                      |
| Regular landings be-<br>low Columbus, not<br>below Hickman, Ky.   | 30                                 | 25 | 23 | 19 | 15 | 14 | 10 | .. | .. | .. | .. | .. | ..          | 214                      |
| Regular landings below<br>Hickman, not below<br>New Madrid, Mo....  | 40                                 | 29 | 27 | 22 | 18 | §  | 19 | .. | .. | .. | .. | .. | ..          | 252                      |
| Regular landings below<br>New Madrid, not be-<br>low Tiptonville, Tenn.   | 60                                 | 50 | 45 | 40 | 32 | 25 | 23 | .. | .. | .. | .. | .. | ..          | 268                      |
| Gayoso, Caruthers-<br>ville, Mo., Tylor,<br>Barfield, Ark.....  | 48                                 | 38 | 33 | 27 | 23 | §  | 24 | .. | .. | .. | .. | .. | ..          | 291-318                  |
| Regular landings below<br>Barfield, not below<br>Luxora and Osceola,<br>Ark.....                                | 53                                 | 41 | 38 | 30 | 23 | §  | 24 | .. | .. | .. | .. | .. | ..          | 341                      |
| Regular landings below<br>Osceola, not below<br>Memphis, Tenn.....  | 50                                 | 38 | 33 | 27 | 23 | 19 | 12 | 11 | 11 | 10 | 16 | 23 | 28          | 421                      |
| From St. Louis to<br>Memphis only.....  | 50                                 | 40 | 35 | 25 | 20 | 18 | 10 | 19 | 10 | 8  | 15 | 32 | 20          | 421                      |
| From Memphis to St.<br>Louis.....   | 45                                 | 35 | 35 | 25 | 20 | 18 | 10 | 12 | 10 | 10 | 14 | 12 | 20          | 421                      |
| All way landings be-<br>tween Cairo, Ill., and<br>Memphis, Tenn.....  | 60                                 | 50 | 45 | 40 | 35 | 30 | 25 | .. | .. | .. | .. | .. | ..          | 176-421                  |
| Helena, Arkansas City,<br>Ark., Friars Point,<br>Greenville, Vicksburg,<br>Miss., Lake Provi-<br>dence, La..... | 60                                 | 50 | 45 | 35 | 30 | 25 | 20 | .. | .. | .. | .. | .. | ..          | 511-830                  |
| From St. Louis to<br>Helena only  .....   | 60                                 | 50 | 45 | 35 | 30 | 25 | 18 | 20 | 18 | 15 | 20 | 40 | 35          | 511-830                  |

TABLE XIX—Continued

| BETWEEN ST. LOUIS, MO.,<br>AND POINTS NAMED BE-<br>LOW, EXCEPT AS OTHER-<br>WISE NOTED       | RATES IN CENTS PER HUNDRED POUNDS* |    |    |    |    |    |    |    |    |    |    |    |     | PER<br>BBL. | DIS-<br>TANCE<br>(Miles) |
|--|------------------------------------|----|----|----|----|----|----|----|----|----|----|----|-----|-------------|--------------------------|
|  | Classes                            |    |    |    |    |    |    |    |    |    |    |    |     |             |                          |
|  | 1                                  | 2  | 3  | 4  | 5  | 6  | A  | B  | C  | D  | E  | H  | F   |             |                          |
| Points between Helena,<br>Ark., and Vicksburg,<br>Miss. ....                                 | 90                                 | 75 | 60 | 50 | 45 | 40 | 30 | .. | .. | .. | .. | .. | ..  | 511-830     |                          |
| From St. Louis to New<br>Orleans and other im-<br>portant points only                        | 60                                 | 50 | 45 | 35 | 30 | 25 | 18 | 21 | 18 | 15 | 20 | 40 | 35  |             |                          |
| From New Orleans to<br>St. Louis  .....  | 60                                 | 50 | 45 | 40 | 30 | 22 | 18 | 18 | 18 | 15 | 18 | 41 | 30  |             |                          |
| BETWEEN CAIRO, ILL., AND   |                                    |    |    |    |    |    |    |    |    |    |    |    |     |             |                          |
| Regular landings below<br>Cairo, not below<br>Memphis, Tenn. ....                            | 38                                 | 29 | 27 | 20 | 18 | 15 | 10 | 8  | 8  | 8  | 10 | 15 | 25  | 245         |                          |
| From Cairo to Memphis<br>only  .....   | 40                                 | 30 | 26 | 20 | 16 | 13 | 7  | 15 | 6  | 6  | 10 | 22 | 15  | 335-654     |                          |
| Helena, Arkansas City,<br>Friars Point, Green-<br>ville, Vicksburg, Lake<br>Providence. .... | 60                                 | 50 | 45 | 35 | 30 | 25 | 20 | .. | .. | .. | .. | .. | ..  |             |                          |
| From Cairo to Helena<br>only  .....  | 50                                 | 40 | 35 | 26 | 23 | 20 | 15 | 22 | 15 | 10 | 16 | 35 | 25  |             |                          |
| Other points between<br>Helena, Ark., and<br>Vicksburg, Miss. ....                           | 90                                 | 75 | 60 | 50 | 45 | 40 | 30 | .. | .. | .. | .. | .. | ..  | 335-654     |                          |
| From Cairo to New<br>Orleans and other<br>important points<br>only  .....                    | 50                                 | 40 | 35 | 26 | 23 | 20 | 15 | 19 | 15 | 10 | 16 | 35 | 25  |             |                          |
| BETWEEN MEMPHIS, TENN.,<br>AND   |                                    |    |    |    |    |    |    |    |    |    |    |    |     |             |                          |
| Regular landings below<br>Memphis, not below<br>Vicksburg, Miss. ....                        | 30                                 | 28 | 23 | 18 | 15 | 12 | 9  | 12 | 11 | 9  | 12 | 13 | 20¶ | 409         |                          |
| From Memphis<br>to Helena only  ....   | 30                                 | 25 | 20 | 18 | 13 | 11 | 8  | 12 | 9  | 8  | 10 | 12 | 12  | 409         |                          |
| From Memphis to New<br>Orleans and rate<br>points  .....                                     | 30                                 | 25 | 20 | 18 | 13 | 11 | 8  | 12 | 9  | 8  | 10 | 12 | 18¶ | 409         |                          |

\* Governed by the Illinois Classification.

† Between St. Louis and points below Cairo on the east bank, the classes are governed by the Southern Classification; between St. Louis and points on the west bank, by the Western Classification. Rates to and from outside landings are 20 per cent higher than to and from regular landings. A higher rate is charged for a short haul than for a longer one.

‡ The boat companies do not classify freight lower than class A except shipments between the larger towns and cities.

§ There is no sixth class in the Western Classification, which applies at these points.

|| Rates of the Mississippi Valley Transportation Company apply at Memphis and other important points only. The points that take New Orleans rates are: Greenville, Vicksburg, Natchez, Baton Rouge, Donaldsonville, and Plaquemine. Tariffs of Mississippi Valley Transportation Company, Nos. 1-6, effective June 15, 1911.

¶ Only 15 cents in carload shipments by rail, 12 by boat.

and Cairo, for example, are governed by the Illinois distance tariff. The rates for 10 miles are:

RATES IN CENTS PER HUNDRED POUNDS\*

| Classes..... | 1  | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------|----|----|---|---|---|---|---|---|---|----|
| Rates.....   | 12 | 11 | 9 | 7 | 5 | 5 | 5 | 4 | 4 | 3  |

\* The fractions less than one-half are not shown, and those of one-half and more are shown as an additional cent.

The rates for longer distances increase until the scale for 150 miles is reached for shipments between St. Louis and Cairo. From this

TABLE XX

BOAT RATES APPLYING ON CLASSES VIA THE MISSISSIPPI RIVER ON THE STRETCH BETWEEN NEW ORLEANS AND THE NORTHERN BOUNDARY OF LOUISIANA\*

| BETWEEN NEW ORLEANS AND INTER-MEDIATE LANDINGS, AND  | RATES IN CENTS PER HUNDRED POUNDS |    |    |    |    |          |    |    |    |    | DISTANCE<br>(Miles) |    |     |
|--|-----------------------------------|----|----|----|----|----------|----|----|----|----|---------------------|----|-----|
|  | Less than Carloads                |    |    |    |    | Carloads |    |    |    |    |                     |    |     |
|  |                                   |    |    |    |    |          |    |    |    |    |                     |    |     |
|  | Classes                           |    |    |    |    | Classes  |    |    |    |    |                     |    |     |
|  | 1                                 | 2  | 3  | 4  | 5  | A        | B  | C  | D  | E  |                     |    |     |
| The more important landings between New Orleans and Donaldsonville, La. . . . .  | 30                                | 25 | 23 | 15 | 20 | 20       | 15 | 12 | 10 | 10 | 1-82                |    |     |
| The less important landings between New Orleans and Donaldsonville, La. . . . .  | 30                                | 26 | 23 | 20 | 15 | 15       | 12 | 12 | 10 | 8  | 1-82                |    |     |
| Landings between Donaldsonville and Baton Rouge and Port Allen, and Bayou Sara proper. . . . .                                 | 30                                | 26 | 23 | 20 | 15 | 15       | 12 | 12 | 10 | 8  | 82-175              |    |     |
| Poplar Grove, Lobdells, Devalls, Hills, and False River Railroad†. . . . .   | 45                                | 40 | 35 | 30 | 25 | 25       | 18 | 16 | 14 | 12 | 140-175             |    |     |
| Landings above Bayou Sara but not above the northern boundary of Louisiana, and including Natchez and Vicksburg, Miss. . . . . | 50                                | 45 | 35 | 30 | 25 | 25       | 20 | 18 | 16 | 15 | 175-476             |    |     |
|  | 1                                 | 2  | 3  | 4  | 5  | 6        | A  | B  | C  | D  | E                   | H  | F   |
| From Memphis to New Orleans‡   | 30                                | 25 | 20 | 18 | 13 | 11       | 8  | 12 | 9  | 8  | 10                  | 12 | 18§ |
| From New Orleans to Memphis‡   | 30                                | 25 | 20 | 18 | 13 | 11       | 8  | 10 | 9  | 8  | 10                  | 12 | 18§ |

\* Railroad Commission of Louisiana, Authorities Nos. 5148, 3178, 3180, and 3421. Governed by the Western Classification. For location of landings named in the table see map on p. 771. Where commodity rates are higher, they are applied. No freight bill made for less than 25 cents, no landing made for less than 50 cents. The Railroad Commission of Louisiana has authority over interstate shipments only, but the boat lines apply the rates at landings on the Mississippi side as far as the northern boundary of Louisiana.

† These landings are between Baton Rouge and Bayou Sara.

‡ Governed by Southern Classification. Rates are published by Mississippi Valley Transportation Company.

§ Only 12 cents in carloads.

it is seen that the shipper located on a railway between St. Louis and Cairo obtains lower freight rates than the shipper at a Mississippi landing. This too without the aid of water competition. The





people of the entire state of Illinois are paying no more than the rates based on the distance table made by the Railroad and Warehouse Commission.

Table XX presents the boat rates approved by the Railroad Commission of Louisiana applying on classes via the Mississippi River on the stretch between New Orleans and the northern border of Louisiana. The structure is similar to that on the section of the river above given in Table XIX. There is a rising scale of rates for the three stretches of this section of the river, but no variation for short distances. There is also a greater charge for a short haul than for a longer one. For example, the rates are higher at several points between Baton Rouge and Bayou Sara than at the latter point, which is above the landings referred to. The first-class rate between New Orleans and Bayou Sara is only 30 cents; while between New Orleans and certain points below Bayou Sara, the rate is 45 cents.

As freight rates have decreased the relative importance of insurance and terminal charges has increased. Drayage at both termini of a route is not infrequently as much as the boat or rail rate on low-grade freight. Drayage may be necessary in shipping via a waterway or via a railway. In some cases the cost of drayage is more by one or the other of these routes, while in others it is the same by each route. Insurance, however, is usually resorted to only in river shipping. Insurance and drayage rates are presented here as an aid in comparing the total costs of freight movement by river with that by rail.

In a comparison of rail and river rates the insurance rates on cargo should be added to the boat rates. This is true because railways usually pay for loss and damage to freight in their care, while boat lines do not. The following are the insurance rates on river cargo in effect in 1910. The rates given are those on \$100 in value of cargo carried by "good steamboats and barges to and from New Orleans and the following points."<sup>1</sup>

<sup>1</sup> Tariff of river premiums adopted by the Board of Underwriters of New Orleans in 1903. Still in effect in 1910.

INSURANCE RATES PER \$100 VALUE APPLYING ON CARGO  
SHIPPED ON THE ILLINOIS AND  
MISSISSIPPI RIVERS

(1) BETWEEN NEW ORLEANS AND POINTS:

|  |         |
|--|---------|
| Not above Baton Rouge.....                           | \$0. 20 |
| Above Baton Rouge, and not above Bayou Sara.....     | . 25    |
| Above Bayou Sara, and not above Grand Gulf.....      | . 35    |
| Above Grand Gulf, and not above Vicksburg.....       | . 40    |
| Above Vicksburg, and not above Greenville.....       | . 45    |
| Above Greenville, and not above Memphis.....         | . 50    |
| Above Memphis, and not above Cairo.....              | . 65    |
| Above Cairo, and not above St. Louis.....            | . 80    |
| Above St. Louis, and not above Keokuk.....           | 1. 00   |
| Above Keokuk, and not above Davenport.....           | 1. 20   |
| Above Davenport, and not above Cassville.....        | 1. 30   |
| Above Cassville, and not above St. Paul.....         | 1. 50   |
| Above St. Louis, and not above Beardstown, Ill. .... | . 95    |
| Above Beardstown, and not above La Salle, Ill.....   | 1. 10   |

(2) BETWEEN THE FOLLOWING INTERMEDIATE POINTS:

|                               |         |
|-------------------------------|---------|
| St. Louis and Cairo.....      | \$0. 40 |
| St. Louis and Memphis.....    | . 50    |
| St. Louis and Vicksburg.....  | . 70    |
| St. Louis and Natchez.....    | . 75    |
| Peoria and St. Louis.....     | . 37½   |
| Cairo and Memphis.....        | . 40    |
| Cairo and Vicksburg.....      | . 50    |
| Cairo and Natchez.....        | . 55    |
| Cincinnati and Vicksburg..... | . 80    |
| Cincinnati and Natchez.....   | . 85    |
| Louisville and Vicksburg..... | . 75    |
| Louisville and Natchez.....   | . 80    |
| Evansville and Vicksburg..... | . 60    |
| Evansville and Natchez.....   | . 65    |
| Memphis and Vicksburg.....    | . 40    |
| Greenville and Vicksburg..... | . 20    |
| Greenville and Natchez.....   | . 30    |
| Natchez and Vicksburg.....    | . 20    |
| Grand Gulf and Natchez.....   | . 20    |
| Bayou Sara and Natchez.....   | . 20    |
| Plaquemine and Natchez.....   | . 20    |

Special rates are charged on cotton seed as follows:

By model barges from any point to New Orleans the rate is \$0.85

By scow barges from any point on the Mississippi to New Orleans..... 1.50

By scow barges from any point on the tributaries of the Mississippi to New Orleans..... 2.00

Harbor risks on cargo in model barges holding underwriters' inspectors' certificate are taken at a rate of \$2.50 per \$100 in value. Hull risks on approved vessels are taken at from 6 to 16 per cent per annum on the value of the vessel. The Lee Line pays 13 per cent on its fleet. This is probably near an average insurance rate for approved wooden hulls on the Mississippi River.

TABLE XXI

INSURANCE RATES IN CENTS PER HUNDRED POUNDS ON COMMODITIES VALUED AT FROM \$1 TO \$150 PER HUNDRED POUNDS FOR A VARYING SCALE OF RATES PER \$100 IN VALUE

| When Rate per \$100 in Value Is: | Insurance Rates in Cents per Hundred Pounds on Commodities Valued at from \$1 to \$150 per Hundred Pounds |     |      |      |      |      |      |      |      |      |       |       |       |
|----------------------------------|---|-----|------|------|------|------|------|------|------|------|-------|-------|-------|
|                                  | \$1   | \$5 | \$10 | \$20 | \$30 | \$40 | \$50 | \$60 | \$70 | \$80 | \$100 | \$120 | \$150 |
| Cents                            |   |     |      |      |      |      |      |      |      |      |       |       |       |
| 20.....                          | 0.2   | 1   | 2    | 4    | 6    | 8    | 10   | 12   | 14   | 16   | 20    | 24    | 30    |
| 30.....                          | .3  | 1.5 | 3    | 6    | 9    | 12   | 15   | 18   | 21   | 24   | 30    | 36    | 45    |
| 40.....                          | .4  | 2   | 4    | 8    | 12   | 16   | 20   | 24   | 28   | 32   | 40    | 48    | 60    |
| 50.....                          | .5  | 2.5 | 5    | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 50    | 60    | 75    |
| 60.....                          | .6  | 3   | 6    | 12   | 18   | 24   | 30   | 36   | 42   | 48   | 60    | 72    | 90    |
| 70.....                          | .7  | 3.5 | 7    | 14   | 21   | 28   | 35   | 42   | 49   | 56   | 70    | 84    | 105   |
| 80.....                          | .8  | 4   | 8    | 16   | 24   | 32   | 40   | 48   | 56   | 64   | 80    | 96    | 120   |
| 100.....                         | 1   | 5   | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 100   | 124   | 150   |
| 120.....                         | 1.2   | 6   | 12   | 24   | 36   | 48   | 60   | 72   | 84   | 96   | 120   | 144   | 180   |
| 150.....                         | 1.5   | 7.5 | 15   | 30   | 45   | 60   | 75   | 90   | 105  | 120  | 150   | 180   | 225   |

The insurance rates per hundred pounds on commodities valued at from \$1 to \$150 per hundred pounds, for the scale of rates per \$100 in value given, are shown in Table XXI. This is given as an aid in estimating the insurance per hundred pounds on the commodities shipped in largest amounts along the route. The insurance rate on wheat at \$1 a bushel shipped between St. Louis and New Orleans according to the scale above is eight-tenths of a cent per bushel or approximately  $1\frac{1}{3}$  cents per hundred pounds. The

rate on household goods valued at \$10 a hundred is 8 cents per hundred pounds. On shoes valued at \$100 per hundred pounds the rate is 80 cents per hundred pounds, and on clothing valued at \$150 per hundred pounds, the rate is \$1.20. There is a large amount of freight on which the insurance alone prevents its shipment by river. A large part of the common stock of dry goods, for example, is valued at \$50 or more per hundred pounds, and the insurance between St. Louis and New Orleans at this value is 40 cents. The finer lingers and silks are valued at as much as \$1,000 per hundred pounds, on which the insurance rate is \$8 per hundred pounds. The rail rate on silk of this value is only \$2.70 from New Orleans to St. Louis, and on the cheaper grades of silk the rate is only 90 cents.

A determining factor in the choice of a freight carrier is often the cost of drayage. The following outline of the charges for drayage at St. Louis and Chicago show, roughly, the rates in those cities, and will aid in estimating the cost at other towns and cities on the route. The rates are those that were in effect in 1910-11:

#### A. DRAYAGE RATES IN ST. LOUIS, MO.,\* IN CENTS PER HUNDRED POUNDS

##### I. For a radius of one mile from the wharf

###### 1. Less than carload lots

|                     |         |
|---------------------|---------|
| a) Ordinary freight | 3       |
| b) Bulky† freight   | 5 to 15 |

###### 2. Carload lots

|                     |             |
|---------------------|-------------|
| a) Ordinary freight | 2.8         |
| b) Bulky freight    | 4.7 to 14.1 |

##### II. City deliveries other than in the down-town district‡

###### 1. Less than carload lots

|                     |         |
|---------------------|---------|
| a) Ordinary freight | 5.4     |
| b) Bulky freight    | 9 to 27 |

###### 2. Carload lots

|                     |           |
|---------------------|-----------|
| a) Ordinary freight | 5.1       |
| b) Bulky freight    | 8.5 to 25 |

\* Information obtained from St. Louis Transfer Company, St. Louis, Mo. The rates at Memphis are almost the same as those at St. Louis.

† "Bulky" freight is freight that requires a large amount of space for its weight.

‡ At least 90 per cent of the river freight goes to the down-town district, probably more than 95 per cent.

## B. DRAYAGE RATES IN CHICAGO, ILL., IN CENTS PER HUNDRED POUNDS

## I. Within the depot district§ and for a haul of 1.5 miles in other parts of the city

|                                      |          |
|--------------------------------------|----------|
| 1. Coal and rolling freight¶         | 2.5      |
| 2. General freight                   | 3        |
| 3. Light and bulky freight           | 5 to 15  |
| 4. Freight especially costly to cart | Per Load |

## II. For each additional mile or fraction thereof..... 0.5

§ The depot district is bounded by Fifteenth Street on the south, Halsted Street on the west, Indiana Street on the north, and Lake Michigan on the east.

¶ Freight in barrels, iron drums, etc.

The rates in the two cities are almost the same within the business sections. But for longer hauls the rates are graded in Chicago, while in St. Louis they are 80 per cent more for all distances greater than those within the business section of the city. The rates at Memphis are very similar to those at St. Louis. At the several cities there are special rates. At Memphis, for example, the rate on cotton is 25 cents per bale; at Greenville and Vicksburg it is only 15 cents.

After this presentation of the boat rates on classes, the insurance, and the drayage charges, it is now necessary to tabulate in comparison the rail rates applying between the more important competitive points. The rail rates taken are the local rates, not the proportional rates, on shipments from beyond. For example, the rate on wheat from a large part of central Illinois to New Orleans is 18 cents per hundred pounds, but the proportion south of St. Louis is only 11 cents. In Table XXII the local rate of 18 cents is shown, although the wheat moves on the 11-cent proportion. Though there are no river rates for comparison, it is perhaps worth while to present the rail rates between Chicago and river points.

Table XXIII shows the class rates by rail in comparison with those by river. Between Peoria and points below St. Louis there are no through boat lines, but the combination of the locals above St. Louis with those below are compared with the through rail rates. The boat rates between points from St. Louis to New Orleans, inclusive, are those published by the Mississippi Valley

Transportation Company<sup>1</sup> in June, 1911. The tariffs of this company govern only the through movement between the larger rail points, and were made lower than the rail rates for the purpose of attracting the competitive business. For seven years there had been no through packet lines, no through rates, and no through packet movement. The combination of the locals usually being higher than the rail rates, there was little through movement. But

TABLE XXII  
RAIL RATES ON CLASSES BETWEEN CHICAGO AND RIVER POINTS

| BETWEEN CHICAGO, ILL., AND | RATES IN CENTS PER HUNDRED POUNDS |    |    |    |    |    |    |    |    |    |
|----------------------------|-----------------------------------|----|----|----|----|----|----|----|----|----|
|                            | Classes (Illinois Classification) |    |    |    |    |    |    |    |    |    |
|                            | 1                                 | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |
| Peoria, Ill. . . . .       | 37                                | 29 | 22 | 18 | 15 | 14 | 13 | 11 | 9  | 8  |
| St. Louis, Mo. . . . .     | 43                                | 35 | 28 | 22 | 18 | 17 | 15 | 14 | 11 | 10 |
| Cairo, Ill. . . . .        | 47                                | 38 | 31 | 24 | 19 | 18 | 17 | 15 | 12 | 11 |

  

|                     | Classes (Southern Classification) |    |    |    |    |    |     |     |    |     |     |    |    |
|---------------------|-----------------------------------|----|----|----|----|----|-----|-----|----|-----|-----|----|----|
|                     | 1                                 | 2  | 3  | 4  | 5  | 6  | A   | B   | C  | D   | E   | H  | F  |
| Memphis, Tenn. . .  | 85                                | 65 | 55 | 43 | 37 | 31 | 21  | 32* | 21 | 18† | 25‡ | 50 | 42 |
| Greenville, Miss. } | 110                               | 90 | 75 | 58 | 47 | 41 | 31§ | 44  | 31 | 26  | 33  | 65 | 57 |
| Vicksburg, Miss. .  |                                   |    |    |    |    |    |     |     |    |     |     |    |    |
| Natchez, Miss. . .  |                                   |    |    |    |    |    |     |     |    |     |     |    |    |
| Baton Rouge, La. }  |                                   |    |    |    |    |    |     |     |    |     |     |    |    |
| New Orleans, La. }  |                                   |    |    |    |    |    |     |     |    |     |     |    |    |

\* South bound only, north-bound rate 31 cents.

† South bound only, north-bound rate 21 cents.

‡ South bound only, north-bound rate 23 cents.

§ From points other than New Orleans the north-bound rate is 34 cents.

during 1911, the Mississippi Valley Transportation Company carried more than 11,000 tons of freight at the boat rates shown in Table XXIII. These rates are materially lower than the rail rates as shown by the differentials. Whether they are low enough to attract sufficient freight to develop an important boat business, and high enough to be remunerative are questions that the experiment alone, perhaps, can answer. The old company found that it could not attract the business in amounts large enough at rates sufficiently high to make the boat line profitable. And the new

<sup>1</sup> Tariffs Nos. 1-6.



TABLE XXIII—Continued

| FROM CAIRO TO   |                | RATES IN CENTS PER HUNDRED POUNDS |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---|----------------|-----------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
|   |                | Classes (Southern Classification) |    |    |    |    |    |    |    |    |    |    |    |    |    |
|   |                | 1                                 | 2  | 3  | 4  | 5  | 6  | A  | B  | C  | D  | E  | H  | F  |    |
| Memphis, Tenn...  | { Rail.....    | 50                                | 38 | 35 | 27 | 23 | 19 | 11 | 21 | 10 | 9  | 15 | 32 | 20 |    |
|   | { Boat.....    | 40                                | 30 | 26 | 20 | 16 | 13 | 7  | 15 | 6  | 6  | 10 | 22 | 15 |    |
|   | { Differential | 10                                | 8  | 9  | 7  | 7  | 6  | 4  | 6  | 4  | 3  | 5  | 10 | 5  |    |
| Greenville, Miss...   | { Rail.....    | 75                                | 63 | 55 | 42 | 33 | 29 | 21 | 32 | 20 | 15 | 23 | 47 | 35 |    |
| Vicksburg, Miss...  |                | { Boat.....                       | 50 | 40 | 35 | 26 | 23 | 20 | 15 | 19 | 15 | 10 | 16 | 35 | 25 |
| Natchez, Miss...  |                | { Differential                    | 25 | 23 | 20 | 16 | 10 | 9  | 6  | 13 | 5  | 5  | 7  | 12 | 10 |
| Baton Rouge, La...  |                |                                   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| New Orleans, La...  |                |                                   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| FROM MEMPHIS,<br>GREENVILLE, VICKS-<br>BURG, AND NATCHEZ TO                     |                |                                   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Greenville, Miss...   | { Rail.....    | 45                                | 40 | 32 | 25 | 20 | 17 | 12 | 18 | 14 | 12 | 15 | 18 | 18 |    |
| Vicksburg, Miss...  |                | { Boat.....                       | 30 | 25 | 20 | 18 | 13 | 11 | 8  | 12 | 9  | 8  | 10 | 12 | 12 |
| Natchez, Miss...  |                | { Differential                    | 15 | 15 | 12 | 7  | 7  | 6  | 4  | 6  | 5  | 4  | 5  | 6  | 6  |
| Baton Rouge, La...  |                |                                   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| New Orleans, La...  |                |                                   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| FROM NEW ORLEANS,<br>BATON ROUGE, NAT-<br>CHEZ, VICKSBURG, AND<br>GREENVILLE TO |                |                                   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Natchez, Miss...  | { Rail.....    | 45                                | 40 | 32 | 25 | 20 | 17 | 12 | 18 | 14 | 12 | 15 | 18 | 18 |    |
| Vicksburg, Miss...  |                | { Boat.....                       | 30 | 25 | 20 | 18 | 13 | 11 | 8  | 10 | 9  | 8  | 10 | 12 | 12 |
| Greenville, Miss...   |                | { Differential                    | 15 | 15 | 12 | 7  | 7  | 6  | 4  | 8  | 5  | 4  | 5  | 6  | 6  |
| Memphis, Tenn...  |                |                                   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cairo, Ill.....   | { Rail.....    | 75                                | 63 | 55 | 42 | 33 | 29 | 21 | 20 | 20 | 15 | 23 | 47 | 35 |    |
|   |                | { Boat.....                       | 50 | 45 | 40 | 30 | 22 | 18 | 15 | 12 | 12 | 11 | 15 | 32 | 22 |
|   |                | { Differential                    | 25 | 18 | 15 | 12 | 11 | 11 | 6  | 8  | 8  | 4  | 8  | 15 | 13 |
| St. Louis, Mo.....  | { Rail.....    | 90                                | 75 | 65 | 50 | 40 | 35 | 25 | 25 | 25 | 23 | 28 | 57 | 45 |    |
|   |                | { Boat.....                       | 60 | 50 | 45 | 40 | 30 | 22 | 18 | 18 | 18 | 15 | 18 | 41 | 30 |
|   |                | { Differential                    | 30 | 25 | 20 | 10 | 10 | 13 | 7  | 7  | 7  | 8  | 10 | 16 | 15 |
| Peoria, Ill. (from<br>New Orleans only)   | { Rail.....    | 110                               | 90 | 75 | 58 | 47 | 41 | 31 | 31 | 31 | 29 | 33 | 65 | 57 |    |
|   |                | { Boat.....                       | 90 | 75 | 65 | 50 | 50 | 43 | .. | .. | .. | .. | .. | .. | .. |
|   |                | { Differential                    | 20 | 15 | 10 | 8  | 4  | 7  | .. | .. | .. | .. | .. | .. | .. |
| (From other sta-<br>tions) .....  | { Rail.....    | 104                               | 86 | 74 | 56 | 45 | 40 | 32 | 42 | 28 | 23 | 32 | 63 | 51 |    |
|   |                | { Boat.....                       | 90 | 75 | 65 | 50 | 43 | 7  | .. | .. | .. | .. | .. | .. | .. |
|   |                | { Differential                    | 14 | 11 | 9  | 6  | 2  | .. | .. | .. | .. | .. | .. | .. | .. |
| FROM MEMPHIS TO   |                |                                   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cairo, Ill.....   | { Rail.....    | 50                                | 38 | 35 | 27 | 23 | 19 | 11 | 13 | 10 | 12 | 15 | 13 | 20 |    |
|   |                | { Boat.....                       | 35 | 27 | 25 | 19 | 16 | 13 | 7  | 9  | 6  | 8  | 10 | 9  | 14 |
|   |                | { Differential                    | 15 | 11 | 10 | 8  | 7  | 6  | 4  | 4  | 4  | 4  | 5  | 4  | 6  |



TABLE XXIII—*Continued*

| FROM MEMPHIS TO  |                | RATES IN CENTS PER HUNDRED POUNDS |    |    |    |    |    |    |    |    |    |    |    |    |  |
|------------------|----------------|-----------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|--|
|                  |                | Classes (Southern Classification) |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                  |                | 1                                 | 2  | 3  | 4  | 5  | 6  | A  | B  | C  | D  | E  | H  | F  |  |
| St. Louis.....   | { Rail.....    | 65                                | 50 | 45 | 35 | 30 | 25 | 15 | 18 | 15 | 15 | 20 | 18 | 30 |  |
|                  | { Boat.....    | 45                                | 35 | 35 | 25 | 20 | 18 | 10 | 12 | 10 | 10 | 14 | 12 | 20 |  |
|                  | { Differential | 20                                | 15 | 10 | 10 | 10 | 7  | 5  | 6  | 5  | 5  | 6  | 6  | 10 |  |
| Peoria, Ill..... | { Rail.....    | 85                                | 65 | 55 | 43 | 37 | 31 | 21 | 24 | 21 | 21 | 25 | 23 | 42 |  |
|                  | { Boat.....    | 75                                | 60 | 55 | 49 | 33 | φ  | .. | .. | .. | .. | .. | .. | .. |  |
|                  | { Differential | 10                                | 5  | 0  | 6* | 4  | .. | .. | .. | .. | .. | .. | .. | .. |  |

\* Rail rates less than boat rates.

† These rates are the sum of the rates from Peoria to St. Louis and from St. Louis to Memphis or Cairo.

‡ No rates published between Peoria and St. Louis for classes 6–10.

§ Less than carload by rail 25 cents, by boat 18 cents.

¶ No rates lower than fifth class from St. Louis to Peoria.

φ Boat rates made on St. Louis combination of locals. No boat rates lower than fifth class between St. Louis and Peoria.

Of course the fact that a significant amount of freight was carried by the boat line in 1911 would seem to be the best proof that an important river movement can be built up. However, there appears to have been considerable extraordinary solicitation of business. The loyalty of the shippers to the waterway development was appealed to, stock was sold to shippers along the route, and considerable interest was developed. This interest, however, will prove temporary unless it will pay the shippers to patronize the boat line.

It may be advantageous to point out some of the conclusions that may be drawn from a comparison of the rates. The differentials between Peoria and St. Louis do not appear to be large enough to overcome insurance, chafing, and drayage. Besides, these are the old rates, and the movement has not been significant in the past. Between Peoria and the points below St. Louis, the combination boat rates are higher than the through rail rates at Cairo, which indicates that there is no movement; and at Memphis the same is true for three of the five classes. From Peoria to points below Memphis the differentials are probably not large enough to overcome transfer at St. Louis, chafing, and insurance.

The rates from St. Louis to Cairo and Memphis are the old ones, and have not attracted any business worthy of mention, although the differentials are from 5 to 15 cents. From St. Louis to points below Memphis, however, the rates are new, and the differentials are from 2 to 30 cents. The differentials of from 15 to 30 cents are sufficient to allow for drayage, insurance (in some cases), chafing, and other disadvantages. Besides, at New Orleans in many cases there is the same drayage for rail traffic as for boat. Moreover, it is between St. Louis and New Orleans that the bulk of the traffic was carried last year. Freight valued as high as \$20 a hundred, however, would be subject to an insurance rate of 8 cents per hundred, which would offset a large part of the differential favorable to the boat line. This would seem to limit the value of freight to something like \$10. The rates are almost the same north bound and deserve no further discussion here.

The rail rates between Memphis, Tenn., and all points from Greenville, Miss., to New Orleans, La., inclusive, are the same. They are exceptionally low for the longer distances. A rate of 45 cents per hundred pounds on first-class freight between Memphis and New Orleans, for example, is remarkably low. Whether the 30-cent rate on first-class freight will prove remunerative between Memphis and New Orleans is probably the most important point in connection with boat traffic. The rail rates on this section of the route were made to secure the river business for the railways and the end sought has been attained. They were not reduced until the boat lines went out of business and then raised again. They were made and continued so low that not a packet line maintained a schedule between Memphis and New Orleans from 1904 to 1911. The railways thrive on receipts from rates lower than those that the boat lines were able to maintain. And the shippers obtain cheap transportation, not on a part of their freight delivered or received at the wharves, but on all freight delivered or received in the particular part of the city most convenient for them.

In comparison with the rail rates applying on domestic shipments given in Tables XXII and XXIII, those applying on exports

and imports between Chicago and St. Louis on the one hand, and New Orleans on the other, are given in Table XXIV.\*

The rates on exports are materially lower than the domestic rates, and the rates on imports are scarcely more than half as much as the domestic rates. The first-class rate on imports from New Orleans to Chicago, for example, is only 57 cents, while the domestic rate is \$1.10. Could Chicago ask for lower rates on imports? Would these rates pay ocean vessels for a 3,300-mile journey through a river and canal channel from New Orleans to Chicago and return? Or does it seem likely that river vessels constructed for the channel could handle imports at a materially lower rate than the railways are now maintaining?

TABLE XXIV

RAIL RATES ON EXPORTS AND IMPORTS VIA NEW ORLEANS, LA.\*

| FROM CHICAGO, ILL., AND<br>ST. LOUIS, TO | RATES IN CENTS PER HUNDRED POUNDS |    |         |    |         |    |    |    |
|--|-----------------------------------|----|---------|----|---------|----|----|----|
|  | Classes                           |    |         |    |         |    |    |    |
|  | 1                                 | 2  | Rule 25 | 3  | Rule 26 | 4  | 5  | 6  |
| New Orleans, La. . . . .                 | 75                                | 65 | 55      | 50 | 40      | 35 | 30 | 25 |
| FROM NEW ORLEANS TO                      |                                   |    |         |    |         |    |    |    |
| Chicago, Ill. . . . .                    | 57                                | 47 | 40      | 38 | 30      | 27 | 24 | 19 |
| St. Louis, Mo. . . . .                   | 70                                | 58 | 49      | 47 | 38      | 33 | 29 | 23 |
| Cairo, Ill. . . . .                      | 72                                | 60 | 51      | 48 | 38      | 34 | 30 | 24 |

\* W. H. Hosmer's tariffs, Interstate Commerce Commission Nos. A-141, A-126, and A-127.

In Table XXV the rail rates on commodities between the more important common points are compared with the boat rates.<sup>1</sup> The

<sup>1</sup> Mr. H. W. Leyhe, general agent of the Eagle Packet Company, furnished the commodity rates applying between Peoria and St. Louis; Mr. J. E. Massengale, traffic manager, St. Louis & Tennessee River Packet Company, between St. Louis and Cairo. The rates on the section of the river between Vicksburg and New Orleans were obtained from the tariffs of the Railroad Commission of Louisiana. The rates applying between St. Louis and Cairo on the one hand and New Orleans and group points were obtained from the tariffs of the Mississippi Valley Transportation Company.

TABLE XXV

COMPARISON OF RAIL RATES, APPLYING ON COMMODITIES SHIPPED IN LARGEST AMOUNTS  
BETWEEN THE MORE IMPORTANT COMMON POINTS ON THE PROPOSED  
WATER ROUTE, WITH CORRESPONDING BOAT RATES

SECTION I. RATES SOUTHWARD FROM CHICAGO (THERE ARE NO BOAT RATES IN EFFECT  
BETWEEN CHICAGO AND POINTS ON THE ROUTE)\*

| To                   | Commodity                         | Rail<br>Rate | Commodity        | Rail<br>Rate | Commodity                         | Rail<br>Rate |
|----------------------|-----------------------------------|--------------|------------------|--------------|-----------------------------------|--------------|
| Peoria, Ill. ....    | Petroleum.....                    | 8            | Grain products.. | 6            | Sugar.....                        | 8            |
|                      | Syrup.....                        | 8            | Pig iron.....    | 6            | Manufactured                      |              |
|                      | Sand.....                         | 6            | Stone.....       | 8            | iron.....                         | 7            |
|                      | Canned goods...                   | 13           | Lumber.....      | 10           | Vegetables....                    | 10           |
|                      | Furniture.....                    | 18           |                  |              | Vehicles.....                     | 14           |
| St. Louis, Mo.....   | Manufactured                      |              | Potatoes.....    | 12           | Salt.....                         | 9            |
|                      | iron.....                         | 11           | Machinery.....   | 16           | Molasses.....                     | 10           |
|                      | Cured meats....                   | 10           | Beer.....        | 14           | Grain products.                   | 8            |
|                      | Wheat.....                        | 8            |                  |              |                                   |              |
|                      | Agricultural im-<br>plements..... | 16           |                  |              |                                   |              |
| Cairo, Ill. ....     | Salt.....                         | 11           | Potatoes.....    | 14           | Wheat.....                        | 10           |
|                      | Oats.....                         | 10           | Coal.....        | 7            | Syrup.....                        | 17           |
|                      | Lumber.....                       | 11           | Sand.....        | 7            | Stone.....                        | 11           |
|                      | Clay.....                         | 11           | Cured meats...   | 18           | Manufactured                      |              |
|                      |                                   |              |                  |              | iron.....                         | 15           |
| Memphis, Tenn....    | Potatoes.....                     | 27           | Cured meats...   | 32           | Oats.....                         | 13           |
|                      | Manufactured                      |              | Grain products.  | 15           | Salt.....                         | 14           |
|                      | iron.....                         | 19           | Hay.....         | 18           | Syrup.....                        | 37           |
|                      | Beer.....                         | 22           | Hardware.....    | 31           |                                   |              |
|                      | Machinery.....                    | 31           |                  |              |                                   |              |
| Greenville, Miss.... | Cured meats...                    | 44           | Salt.....        | 23           | Potatoes.....                     | 35           |
|                      | Grain products..                  | 21           | Beer.....        | 27           | Manufactured                      |              |
|                      | Machinery.....                    | 41           | Lumber.....      | 30           | iron.....                         | 28           |
| Vicksburg, Miss....  | Cured meats...                    | 44           | Potatoes.....    | 35           | Lumber.....                       | 30           |
|                      | Grain products..                  | 21           | Beer.....        | 27           | Agricultural im-<br>plements..... | 36           |
|                      | Machinery.....                    | 41           | Oats.....        | 18           | Manufactured                      |              |
|                      | Furniture.....                    | 58           |                  |              | iron.....                         | 28           |
| Natchez, Miss....    | Cured meats...                    | 44           | Salt.....        | 22           | Potatoes.....                     | 35           |
|                      | Corn.....                         | 18           | Hardware.....    | 41           | Beer.....                         | 27           |
|                      | Syrup.....                        | 47           |                  |              |                                   |              |
| Baton Rouge, La....  | Potatoes.....                     | 35           | Cured meats...   | 44           | Manufactured                      |              |
|                      | Beer.....                         | 27           | Corn.....        | 18           | iron.....                         | 28           |
|                      |                                   |              |                  |              | Hardware.....                     | 28           |
| New Orleans, La....  | Potatoes.....                     | 35           | Cured meats...   | 44           | Grain products.                   | 21           |
|                      | Beer.....                         | 27           | Manufactured     |              | Fertilizer.....                   | 21           |
|                      | Hay.....                          | 26           | iron.....        | 28           |                                   |              |
|                      |                                   |              | Syrup.....       | 47           |                                   |              |

\* The rail rates were obtained from Mr. Joseph Hattendorf, general freight agent, Illinois Central Railroad Company. A fraction of one-half or more is written as an additional cent; fractions less than one-half are disregarded.

rates are reduced to cents per hundred pounds, and fractions are disregarded or computed as additional cents.

The rates are here tabulated according to the geographical order of the stations. Beginning with Chicago, the south-bound rates are given, and with New Orleans the north-bound rates are tabulated. The rates are given on the commodities moving in largest amounts by rail for the calendar year 1909, and are arranged approximately in the order of the amounts of the several commodities. For example, in Section 1 of Table XXV, petroleum is placed first as the chief commodity moving from and through Chicago to and through Peoria. Of course a large part of the freight does not originate at Chicago, nor is it destined to Peoria; but it originates beyond and is destined beyond. This through freight does not move on the local rail rates, but on the proportions applicable on the section of the route over which it moves. The local rates are higher, but are appropriately chosen for the comparative purpose of the table, inasmuch as boat lines are largely limited to freight moving from port to port.

The important question is: What freight can the boats obtain at the large competitive points? From Chicago, for example, what freight could be carried by boat to the points along the route? Among the several commodities named in discussing the freight handled through the Port of Chicago, was manufactured iron. There is a considerable movement of this commodity from Chicago and vicinity to and through Peoria, St. Louis, and other river points. But we have given the opinion of the traffic manager<sup>1</sup> of the Illinois Steel Company that his company could not use the waterway even if it were made 20 or more feet in depth. The rate on manufactured iron from Chicago to Peoria is 7 cents a hundred, and to St. Louis 11 cents. When asked if it would not be possible to ship iron by boat from the harbor of South Chicago to Peoria or St. Louis at these rates, Mr. Bentley replied that no large part of his shipments was destined to these points, but through them to the Southwest; and that the through rail rates to destination were little more than the local rates from these points to destination. He gave a similar reason for not shipping via the lakes through Duluth

<sup>1</sup> Mr. Frank T. Bentley.

to the Northwest. However, he stated further that he found it advantageous to ship by water to lake ports only where the competing railways were forced to make a circuitous route, as in the case of the ports on the north shore of Lake Superior; and that it would not pay him to ship freight destined to St. Louis via an all-water route composed of canals and rivers.

It would seem that if manufactured iron cannot be carried from Chicago for local delivery at Peoria, St. Louis, or other river points, other manufactures could not. The iron plants are located on the lake, and iron could be loaded from the mills into the boats. Such commodities as agricultural implements, hardware, furniture, vehicles, dry goods, notions, and other manufactures of comparatively high value and delicate finish could be carried less advantageously than iron on the river. Mr. Frank B. Montgomery, traffic manager for the International Harvester Company, admitted to the writer that "chafing" alone would be an important factor against shipping agricultural implements by river. Mr. James J. Wait, traffic manager for Hibbard, Spencer & Bartlett, of Chicago, was of the opinion that the waterway would be of service to his company in shipping hardware; but the Simmons Hardware Company of St. Louis makes no use whatever of the Mississippi between St. Louis and rail points on the river, though the Mississippi River is a more efficient waterway than could reasonably be constructed between St. Louis and Chicago. Grain moves east through Chicago, but even with an open route such as the lakes, the railways carry the larger part of the grain. Of course packing-house products are shipped by rail, and could not be easily attracted to a river route.

In Section 2 of Table XXV, it is shown that the commodity rates from Peoria to St. Louis are less by rail than by boat for every commodity listed except butter and cheese. It would not be worth while to compare the combination boat rates between Peoria and points below St. Louis with the through rail rates, for there could be no through movement when the boat rates, as at present, are higher than the rail rates.

In Section 3, the rates from St. Louis to points on the lower river are shown. From 1904 to 1911 there had been no through

TABLE XXV—*Continued*

## SECTION 2. RATES SOUTHWARD FROM PEORIA

| To                    | Commodity                         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity                         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|-----------------------|-----------------------------------|--------------|--------------|-------------------|-----------------------------------|--------------|--------------|-------------------|
| St. Louis, Mo.....    | Oats.....                         | 10           | 6            | 4*                | Manufactured                      |              |              |                   |
|                       | Grain products ..                 | 10           | 7            | 3*                | iron.....                         | 13           | 7            | 6                 |
|                       | Butter and cheese                 | 15           | 18           | 3                 | Hay.....                          | 15           | 9            | 6                 |
|                       | Cured meats ....                  | 15           | 9            | 6*                | Furniture.....                    | 25           | 18           | 7                 |
|                       | Agricultural im-<br>plements..... | 15           | 11           | 4*                | Machinery.....                    | 30           | 14           | 6*                |
|                       | Beer.....                         | 15           | 13           | 2*                | Fruits and vege-<br>tables.....   | 30           | 10           | 20*               |
| Cairo, Ill.†.....     |                                   |              |              |                   | Tile.....                         | 8            | 6            | 2*                |
|                       | Flour.....                        |              | 8            | ...               | Beer.....                         |              | 18           | ...               |
|                       | Manufactured                      |              |              |                   | Potatoes.....                     |              | 13           | ...               |
|                       | iron.....                         |              | 15           | ...               | Oats.....                         |              | 8            | ...               |
|                       | Hay.....                          |              | 11           | ...               | Syrup.....                        |              | 15           | ...               |
|                       | Fertilizer.....                   |              | 10           | ...               | Machinery.....                    |              | 17           | ...               |
| Memphis, Tenn....     | Corn.....                         |              | 8            | ...               | Clay.....                         |              | 10           | ...               |
|                       | Cabbage.....                      |              | 13           | ...               |                                   |              |              |                   |
|                       | Buckwheat.....                    |              | 12           | ...               | Oats.....                         |              | 12           | ...               |
|                       | Flour.....                        |              | 12           | ...               | Beer.....                         |              | 20           | ...               |
|                       | Machinery.....                    |              | 30           | ...               | Potatoes.....                     |              | 26           | ...               |
|                       | Manufactured                      |              |              |                   | Agricultural im-<br>plements..... |              | 22           | ...               |
| Greenville, Miss....  | iron.....                         |              | 16           | ...               | Hay.....                          |              | 15           | ...               |
|                       | Grain products ..                 |              | 12           | ...               | Petroleum.....                    |              | 35           | ...               |
|                       | Syrup.....                        |              | 35           | ...               |                                   |              |              |                   |
|                       | Packing-house                     |              |              |                   | Hardware.....                     |              | 41           | ...               |
|                       | products.....                     |              | 42           | ...               |                                   |              |              |                   |
|                       | Salt.....                         |              | 19           | ...               |                                   |              |              |                   |
| Vicksburg, Miss....   | Potatoes.....                     |              | 34           | ...               | Packing-house                     |              |              |                   |
|                       | Beer.....                         |              | 24           | ...               | products.....                     |              | 42           | ...               |
|                       |                                   |              |              |                   | Manufactured                      |              |              |                   |
|                       |                                   |              |              |                   | iron.....                         |              | 25           | ...               |
|                       |                                   |              |              |                   |                                   |              |              |                   |
|                       |                                   |              |              |                   |                                   |              |              |                   |
| Natchez, Miss.....    | Flour.....                        |              | 18           | ...               | Cured meats ..                    |              | 42           | ...               |
|                       | Potatoes.....                     |              | 34           | ...               | Manufactured                      |              |              |                   |
|                       |                                   |              |              |                   | iron.....                         |              | 25           | ...               |
|                       |                                   |              |              |                   |                                   |              |              |                   |
|                       |                                   |              |              |                   |                                   |              |              |                   |
|                       |                                   |              |              |                   |                                   |              |              |                   |
| Baton Rouge, La. .... | Flour.....                        |              | 18           | ...               |                                   |              |              |                   |
|                       |                                   |              |              |                   |                                   |              |              |                   |
|                       |                                   |              |              |                   |                                   |              |              |                   |
|                       |                                   |              |              |                   |                                   |              |              |                   |
|                       |                                   |              |              |                   |                                   |              |              |                   |
|                       |                                   |              |              |                   |                                   |              |              |                   |
| New Orleans, La. .... | Grain products ..                 |              | 18           | ...               | Flour.....                        |              | 18           | ...               |
|                       | Potatoes.....                     |              | 34           | ...               | Cured meats ..                    |              | 42           | ...               |
|                       | Beer.....                         |              | 24           | ...               | Manufactured                      |              |              |                   |
|                       | Hay.....                          |              | 23           | ...               | iron.....                         |              | 25           | ...               |
|                       | Machinery.....                    |              | 40           | ...               | Brick.....                        |              | 18           | ...               |
|                       | Hardware.....                     |              | 41           | ...               | Oats.....                         |              | 18           | ...               |

\* The rail rates are lower than the boat rates.

† There are no through boat rates in effect, except to St. Louis, from Peoria. As local rates are higher by boat than by rail, the combination of the boat locals on St. Louis is so much higher in the case of commodity rates that comparison is not necessary.

boat line between St. Louis and points below Memphis. But in 1911 the Mississippi Valley Transportation Company published both class and commodity rates applying at the most important points between St. Louis and New Orleans. These rates are on an average some 30 per cent less than the rail rates applying between the important river points. However, rates from St. Louis to Cairo were not included in the tariffs of the company. The rates from St. Louis to Cairo given in the table are those of the boat lines that touch at that point. It is shown that the rail rates are the lower on more than half of the commodities.

From St. Louis to Memphis the reduced boat rates of the Mississippi Valley Transportation Company are shown. But it is plain that the boats are limited in the amount of freight that can be secured, even with specially reduced rates between St. Louis and Memphis. For example, the rate on grains was reduced to 8 cents, while the local rate by rail was 11 cents on wheat and 10 cents on other grains. The grains do not grow in the streets of St. Louis but in the fields of Kansas and other states. They are carried through St. Louis with the privilege of milling in transit at a proportion of the through rate of, roughly, 7 cents between St. Louis and Memphis and 11 cents between St. Louis and New Orleans. Of course shippers will not pay 8 cents to Memphis and 15 cents to New Orleans when they can save transfer at St. Louis and ship by rail for 7 cents to Memphis and 11 cents to New Orleans with the milling-in-transit privilege. Shippers who do not have grain milled at St. Louis ship on a through bill of lading at the through rate. On grain shipped into St. Louis by boat the local rates apply out by rail. That is, the rail rates to Memphis are 10 cents on coarse grains and 11 on wheat, while the boat rates are only 8 cents. This explains the movement of a small amount of sacked grain from St. Louis to Memphis by boat in 1911.

The decline in the shipment of grain has perhaps attracted more attention than any other phase of the declining river traffic. It is sometimes said that the reason the barge lines no longer carry grain to New Orleans is that there is no longer any grain to ship. It is true that the rail movement of grain from Kansas, Nebraska, Missouri, and Oklahoma through Memphis, and through Galveston



TABLE XXV—Continued  
SECTION 3. RATES SOUTHWARD FROM ST. LOUIS

| To                     | Commodity         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|------------------------|-------------------|--------------|--------------|-------------------|-------------------|--------------|--------------|-------------------|
| Cairo, Ill. ....       | Wheat. ....       | 10†          | 6            | 4*                | Oats. ....        | 10†          | 6            | 4*                |
|                        | Cured meats. .... | 15           | 14           | 1*                | Common brick. .   | 6            | 7            | 1                 |
|                        | Corn. ....        | 10†          | 6            | 4*                | Syrup. ....       | 10†          | 14           | 4                 |
|                        | Potatoes. ....    | 15           | 10           | 5*                | Manufactured      |              |              |                   |
|                        | Fire-brick. ....  | 6            | 8            | 2                 | iron. ....        | 10           | 11           | 1                 |
|                        | Flour. ....       | 10†          | 6            | 4*                | Grain products    | 10†          | 6            | 4*                |
|                        |                   |              |              |                   | Cement. ....      | 7            | 7            | 0                 |
| Memphis, Tenn. ....    | Oats. ....        | 8†           | 10           | 2                 | Petroleum. ....   | 11           | 12           | 1                 |
|                        | Corn. ....        | 8†           | 10           | 2                 | Grain products. . | 8            | 10           | 2                 |
|                        | Hay. ....         | 12           | 12           | 0                 | Cured meats. .    | 10           | 15           | 5                 |
|                        | Potatoes. ....    | 19           | 22           | 3                 | Flour. ....       | 8†           | 11           | 3                 |
|                        | Manufactured      |              |              |                   | Horses. ....      | 18           | 13           | 5*                |
|                        | iron. ....        | 9            | 13           | 4                 | Fire-brick. ....  | 8            | 10           | 2                 |
|                        | Wheat. ....       | 8†           | 11           | 3                 |                   |              |              |                   |
| Greenville, Miss. .... | Grain products. . | 15           | 16           | 1                 | Flour. ....       | 15           | 18           | 3                 |
|                        | Cured meats. .... | 25           | 33           | 8                 | Petroleum. ....   | 20           | 18           | 2*                |
|                        | Oats. ....        | 15           | 16           | 1                 | Hay. ....         | 18           | 20           | 2                 |
|                        | Fire-brick. ....  | 15           | 15           | 0                 | Horses. ....      | †            | 23           | ...               |
|                        | Beer. ....        | 16           | 22           | 6                 | Corn. ....        | 15           | 16           | 1                 |
|                        | Steel rails. .... | 10           | 10           | 0                 | Hardware. ....    | 18           | 25           | 7                 |
| Vicksburg, Miss. ....  | Grain products. . | 15           | 16           | 1                 | Oats. ....        | 15           | 16           | 1                 |
|                        | Beer. ....        | 16           | 16           | 0                 | Oats. ....        | 15           | 16           | 1                 |
|                        | Fire-brick. ....  | 15           | 15           | 0                 | Potatoes. ....    | 20           | 30           | 10                |
|                        | Corn. ....        | 15           | 16           | 1                 | Flour. ....       | 15           | 18           | 3                 |
|                        | Cured meats. .... | 25           | 33           | 8                 | Horses. ....      | †            | 25           | ...               |
|                        | Syrup. ....       | 30           | 40           | 10                | Machinery. ....   | 25           | 35           | 10                |
| Natchez, Miss. ....    | Oats. ....        | 15           | 16           | 1                 | Grain products. . | 15           | 16           | 1                 |
|                        | Cured meats. .... | 25           | 33           | 8                 | Flour. ....       | 15           | 18           | 3                 |
|                        | Potatoes. ....    | 20           | 30           | 10                | Beer. ....        | 16           | 22           | 6                 |
|                        | Corn. ....        | 15           | 16           | 1                 | Petroleum. ....   | 20           | 18           | 2*                |
|                        | Fire-brick. ....  | 15           | 15           | 0                 | Hay. ....         | 18           | 20           | 2                 |
|                        | Hardware. ....    | 25           | 35           | 10                | Vehicles. ....    | 25           | 31           | 6                 |
| Baton Rouge, La. ...   | Oats. ....        | 15           | 16           | 1                 | Grain products. . | 15           | 16           | 1                 |
|                        | Beer. ....        | 16           | 22           | 6                 | Flour. ....       | 15           | 18           | 3                 |
|                        | Cured meats. .... | 25           | 33           | 8                 | Potatoes. ....    | 20           | 30           | 10                |
|                        | Machinery. ....   | 25           | 35           | 10                | Corn. ....        | 15           | 16           | 1                 |
|                        | Hay. ....         | 18           | 20           | 2                 | Tile. ....        | 14           | 18           | 4                 |
|                        | Sheet iron. ....  | 15           | 22           | 7                 | Lumber. ....      | 16           | 20           | 4                 |
| New Orleans, La. ....  | Oats. ....        | 15           | 16           | 1                 | Corn. ....        | 15           | 16           | 1                 |
|                        | Wheat. ....       | 15           | 18           | 3                 | Grain products. . | 15           | 16           | 1                 |
|                        | Flour. ....       | 12           | 18           | 6                 | Cured meats. .    | 25           | 33           | 8                 |
|                        | Potatoes. ....    | 20           | 30           | 10                | Hay. ....         | 18           | 20           | 2                 |
|                        | Fire-brick. ....  | 15           | 15           | 0                 | Beer. ....        | 16           | 22           | 6                 |
|                        | Hardware. ....    | 25           | 35           | 10                | Car wheels. ....  | 15           | 22           | 7                 |

\* The rail rates are lower than the boat rates.

† Rates on grain and grain products to outside landings between St. Louis and Memphis are 25 cents per hundred pounds.

‡ No boat rates in effect.

and New Orleans by southern routes direct, has diverted grain that otherwise might have been collected at St. Louis for river traffic. Yet the grain receipts at St. Louis were larger for the last five years than for any period of five years except the period from 1901-5, and the shipments were more than for any other five-year period. This is shown by the following figures of average annual receipts and shipments of grain and grain products at St. Louis for quinquennial periods, from 1881 to 1910:

AVERAGE ANNUAL RECEIPTS AND SHIPMENTS OF  
GRAIN AND GRAIN PRODUCTS AT ST. LOUIS FOR  
QUINQUENNIAL PERIODS, FROM 1881 TO 1910

| Years          | Receipts   | Shipments  |
|----------------|------------|------------|
| 1881-1885..... | 54,345,083 | 41,646,235 |
| 1886-1890..... | 57,824,862 | 44,824,862 |
| 1891-1895..... | 60,957,778 | 44,176,750 |
| 1896-1900..... | 61,156,599 | 47,249,044 |
| 1901-1905..... | 85,165,202 | 64,781,005 |
| 1906-1910..... | 78,192,891 | 68,189,739 |

Moreover, there has been only a slight decline in the amount of grain shipped from St. Louis to New Orleans, and this decline could not account for the entire cessation of the river traffic in grain. In 1909 the five most important through rail routes from St. Louis to New Orleans probably carried more than 12,000,000 bushels of grain and grain products from and through St. Louis to New Orleans. This amount is more than was ever carried on the river except for two years, 1880 and 1889.

There must be other reasons, then, for the diminution of the grain movement on the Mississippi. The decline in the importation of German cement has been given as a cause of the decline in the boat business between St. Louis and New Orleans. It is thought that the cement traffic, as a return load, enabled the boat lines to remain in business. But the former president of the old St. Louis and Mississippi Valley Transportation Company stated to the writer that the revenue from the up-stream business never amounted to a "drop in the bucket" toward dividends. On account of the current the up-stream traffic does not pay barge lines.

The traffic managers of grain dealers at Memphis and other

distributing points state that grain cannot be shipped from the northern fields to lower Mississippi Valley points by boat for several reasons. The grain originates on the farms and is shipped on a through rate with milling-in-transit privileges at St. Louis or other points, allowing only 10 or 11 cents for the proportion south of St. Louis, when destined to New Orleans, or some 7 cents when destined to Memphis. The mills at St. Louis are served by rail spurs, saving drayage; and the dealer at Memphis usually avoids drayage by locating his warehouse on the belt line, whereas the oscillating river stage prevents the location of warehouses to advantage on the wharf. Or, the grain is shipped to Memphis for milling, and is sent out by the dealer to his customers on the through rate from the northern field to the planter in Mississippi or elsewhere.

The lack of depth in the river channel is the reason commonly assigned for the falling-off in river traffic. But the channel has been markedly improved since 1890, when barge traffic was flourishing. The low-water channel between St. Louis and Cairo was about 4 feet in depth in 1890; it is now 8 feet. The barges in the palmy days of river traffic, even when more water was available, rarely loaded to a draft of more than 8 feet. The officers of the old barge lines do not assign lack of depth of channel as a cause of the destruction of their business. They say it was due to rail competition. The railways serve the wheat-growing regions; and when they extended their through service to the South, built tracks to all important collecting points, constructed elevators on their lines, and made the rates so low that the boat lines could no longer attract the grain to the river, then it was that the keen financiers who directed the business organization of the barge companies sold the equipment and retired before their more efficient competitors. The managers of the old Mississippi Valley Transportation Company state that they were backed by able and keen financiers, that they could have built steel barges or any other equipment that would have made the river business a paying business, but that they saw that they could never retain enough traffic to pay dividends. They further assert now that no barge line can ever attract the business, that the railways will "take the business" without regard to the kind of equipment that may be floated on the river.

Before leaving the discussion of freight movement from St. Louis by barge, the movement of coal to and from St. Louis should be considered. A favorite idea of waterway advocates is that low-grade freight would seek an improved Mississippi. Many think coal would be shipped by water from southern Illinois to St. Louis and Chicago, or from St. Louis to the South. The coal in the latter case would be collected at St. Louis from the Illinois mines. The statement of a few conditions and rates will show that this is improbable. The Union Electric Light & Power Company of St. Louis is located on the bank of the river. A letter from this company states: "We are not receiving coal by river; all our coal comes by rail from the near-by fields in Illinois, as the price is much cheaper than to get coal by water. Our coal requirements are over 300,000 tons a year at an average cost of \$1.15 per ton f.o.b. the power stations." The Western Kentucky Coal Company now carries coal from the mines on the Ohio River near Providence, Ky., to Memphis, but this company has found it impracticable to furnish coal to the above-named important consumer, even on the very banks of the river at St. Louis. There is all the water needed, but the railways furnish coal cheaper than the boat company can. If coal cannot be carried from the banks of the Ohio to the banks of the Mississippi at St. Louis, in competition with rail coal, how could it be carried up stream through a system of locks and canals, in addition to the journey to St. Louis, for 363 miles to Chicago in competition with direct railways? If the boats could reach the mines in southern Illinois, and would carry the coal free to Chicago, the drayage rate for city deliveries might still involve an expense as great as the cost of delivery by railway. Coal is loaded throughout central Illinois and carried by rail to any team track in Chicago or St. Louis for from 3 to 4 cents a hundred, or 1 cent more than the cost of drayage for a distance of one mile in St. Louis.

As shown in Section 3 of Table XXV, potatoes are a commodity that moves in large quantities from St. Louis to Memphis, but potatoes grow in Minnesota or elsewhere and are moved on special schedule with attendants, usually. The 3 cents difference between boat and rail rates would not balance cost of transfer, even if there were no other advantages of shipping by rail. Manufactured iron

moves from St. Louis to Memphis at 9 cents by boat and 13 by rail, but the drayage of  $2\frac{1}{2}$  cents at each end of the haul, not to mention the insurance, makes the rail rate cheaper. Fire-brick moves from St. Louis to Memphis and New Orleans at the same rates by rail or river. But the brick from points north and west of St. Louis moves through St. Louis to these points on a through rate which allows less than the local rates for the section of the route between St. Louis and Memphis. For two reasons the boats could not carry brick from St. Louis to lower river points: (1) Fire-brick fleaks easily, and is packed in straw in cars on the tracks at the kilns 8 miles west of St. Louis. (2) For the boats to obtain this brick, it would be necessary to switch the cars to the wharf and transfer to the boat. The cost of switching and transfer at origin and the damage by fleaking make the rail rates cheaper, even if insurance, drayage, and switching at destination be disregarded.

Beer from St. Louis to New Orleans moves at 16 cents by boat and 22 by rail, but insurance is 2 cents and only 4 cents are left for drayage at both origin and destination. Car wheels and certain other articles of machinery move at 15 cents by boat and 22 cents by rail from St. Louis to New Orleans. It would seem that the boats might attract this class of business though the margin under the rail rates is small.

A fair idea of the nature of the freight carried from St. Louis to New Orleans in 1911 on the reduced rates made by the Mississippi Valley Transportation Company may be obtained from the following itemized statement of one of the cargoes. The towboat "Mariner" arrived at New Orleans on September 5, 1911, with the steel barge "Edward E. Green" and another in tow, and according to the *New Orleans Picayune* of September 6, brought the following items of freight: 800 sacks of corn; 200 sacks of oats; 2,240 pieces of bar iron; 561 bundles of bar iron; 226 barrels of chain; 4,649 bundles of singletrees (iron?); 120 bottles of beer; 234 car jacks; 100 crates of tinware; 825 rolls of roofing paper; 864 cases of baking powder; 1,550 bundles of galvanized iron; 271 bundles of wire fencing; 2,400 bundles of water pipe; 9,000 sacks of cement; 1,012 empty barrels; and a quantity of miscellaneous freight.

TABLE XXV—Continued

## SECTION 4. RATES SOUTHWARD FROM CAIRO

| To                  | Commodity                    | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity                    | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|---------------------|------------------------------|--------------|--------------|-------------------|------------------------------|--------------|--------------|-------------------|
| Memphis, Tenn...    | Oats.....                    | 5.5          | 8            | 2.5               | Corn.....                    | 5.5          | 8            | 2.5               |
|                     | Flour.....                   | 5.5          | 9            | 3.5               | Grain products               | 5.5          | 8            | 2.5               |
|                     | Hay.....                     | 8            | 9            | 1                 | Wheat.....                   | 5.5          | 9            | 3.5               |
|                     | Manufactured<br>iron.....    | 7            | 8            | 1                 | Potatoes.....                | 15           | 17           | 2                 |
|                     | Hardware.....                | 15           | 19           | 4                 | Agricultural<br>implements.. | 9            | 13           | 4                 |
|                     | Petroleum.....               | 9            | 11           | 2                 | Lumber.....                  | 13           | 10           | 3*                |
| Greenville, Miss... | Flour.....                   | 10           | 15           | 5                 | Oats.....                    | 10           | 14           | 4                 |
|                     | Hay.....                     | 15           | 15           | 0                 | Corn.....                    | 10           | 14           | 4                 |
|                     | Lumber.....                  | 15           | 18           | 3                 | Salt.....                    | 10           | 12           | 2                 |
|                     | Agricultural<br>implements.. | 20           | 25           | 5                 | Hardware.....                | 25           | 29           | 4                 |
| Vicksburg, Miss...  | Oats.....                    | 15           | 14           | 1*                | Hay.....                     | 15           | 15           | 0                 |
|                     | Stone.....                   | 10           | 13           | 3                 | Potatoes.....                | 20           | 24           | 4                 |
|                     | Cured meats..                | 19           | 27           | 8                 | Corn.....                    | 10           | 14           | 4                 |
|                     | Salt.....                    | 10           | 12           | 2                 | Flour.....                   | 10           | 14           | 4                 |
|                     | Hardware.....                | 25           | 29           | 4                 | Manufactured<br>iron.....    | 13           | 17           | 4                 |
| Natchez, Miss....   | Oats.....                    | 10           | 14           | 4                 | Hay.....                     | 15           | 15           | 0                 |
|                     | Flour.....                   | 10           | 14           | 4                 | Potatoes.....                | 20           | 24           | 4                 |
|                     | Agricultural<br>implements.. | 20           | 25           | 5                 | Hardware.....                | 25           | 29           | 4                 |
| Baton Rouge, La...  | Oats.....                    | 10           | 14           | 4                 | Corn.....                    | 10           | 14           | 4                 |
|                     | Grain products               | 10           | 14           | 4                 | Hay.....                     | 15           | 15           | 0                 |
|                     | Vehicles.....                | 20           | 25           | 5                 |                              |              |              |                   |
| New Orleans, La...  | Oats.....                    | 10           | 14           | 4                 | Corn.....                    | 10           | 14           | 4                 |
|                     | Grain products               | 10           | 14           | 4                 | Flour.....                   | 10           | 14           | 4                 |
|                     | Machinery.....               | 12           | 19           | 7                 | Lumber.....                  | 15           | 18           | 3                 |
|                     | Hay.....                     | 15           | 15           | 0                 | Manufactured<br>iron.....    | 13           | 17           | 4                 |
|                     | Hardware.....                | 20           | 29           | 9                 | Agricultural<br>implements.. | 20           | 25           | 5                 |
|                     | Petroleum.....               | 15           | 18           | 3                 | Fertilizer.....              | 12           | 10           | 2*                |

\* The rail rates are lower than the boat rates.

Passing Section 4 of the table, Section 5 shows that cotton is the commodity shipped in largest amount from Memphis to New Orleans by rail. The movement of cotton in the lower Mississippi Valley is a good example of the efficiency of the railways in competition with even a broad and deep waterway, such as the Mississippi is below Memphis. It is not difficult to understand why cotton

will probably never be shipped again in important quantities between Memphis and New Orleans by water. The rail rate on compressed cotton is \$1.00 a bale. On cotton shipped by river the insurance rate for 1910 was 50 cents a bale;<sup>2</sup> the drayage from the compress, 25 cents; and the damage to cotton from muddy banks and exposure to the weather is perhaps equal to the remaining 25 cents a bale. Perhaps therefore cotton from the compress at Memphis would not be shipped by boat, even if there were no charges for the boat haul, and yet the rate was 60 cents a bale in 1911. The charges, then, by boat were virtually \$1.35 against only \$1.00 by rail. Moreover, when cotton is shipped into Memphis by rail the rate out is only 90 cents when destined to New Orleans. One of the largest cotton factors of Memphis stated to the writer that "almost any other commodity could be shipped by river from Memphis to New Orleans better than cotton." But the grain dealers of Memphis were of the same opinion concerning grain from St. Louis. Indeed, almost every shipper along the route can explain why his commodity cannot be shipped by river.

A large planter and ginner near Greenville whose gin is located scarcely 200 yards from the levee, on being asked why he did not ship his cotton by river, said: "Too far to haul it." The river landing at this point is only three miles inside the levee, the average distance from the levee. There are other reasons why he does not ship by river. One of them is that it costs more to ship by river, even if the wagon haul at Gunnison be not considered. He markets his cotton at Memphis. The boat rate from Gunnison to Memphis is 75 cents per bale, the levee tax 10 cents, the insurance 35 cents, and the drayage at Memphis 25 cents, a total of \$1.45 per bale. The rail rate, which practically includes the insurance, is \$1.375 per bale, and the saving by rail is 7½ cents, in addition to the cost of the wagon haul at Gunnison. Moreover, when the cotton is destined beyond Memphis, it is shipped on a through bill of lading and compressed in transit. The bill of lading is negotiable

<sup>2</sup> This rate could probably be reduced for steel barges, but the Mississippi Valley Transportation Company was unable to induce the cotton factors of Memphis to ship by river in 1911.

when the cotton is receipted for at point of origin by the carrier. At present the boat lines do not issue through bills of lading, and a heavy bond would be necessary to enable them to issue order bills

TABLE XXV—*Continued*

## SECTION 5. RATES SOUTHWARD FROM MEMPHIS

| To                  | Commodity        | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity        | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|---------------------|------------------|--------------|--------------|-------------------|------------------|--------------|--------------|-------------------|
| Greenville, Miss... | Oats.....        | 8            | 9            | 1                 | Corn.....        | 8            | 9            | 1                 |
|                     | Grain products.. | 8            | 9            | 1                 | Flour.....       | 8            | 9            | 1                 |
|                     | Hay.....         | 10           | 12           | 2                 | Coal.....        | 9            | 8            | 1*                |
|                     | Cured meats...   | 12           | 18           | 6                 | Common brick..   | 9            | 7            | 2*                |
|                     | Lumber.....      | 12           | 9            | 3*                | Potatoes.....    | 12           | 12           | 0                 |
|                     | Beer.....        | 12           | 15           | 3                 | Machinery.....   | 12           | 17           | 5                 |
| Vicksburg, Miss...  | Oats.....        | 8            | 9            | 1                 | Corn.....        | 8            | 9            | 1                 |
|                     | Grain products.. | 8            | 9            | 1                 | Cured meats...   | 10           | 18           | 8                 |
|                     | Flour.....       | 8            | 9            | 1                 | Manufactured     |              |              |                   |
|                     | Cotton oil.....  | 15           | 15           | 0                 | iron.....        | 12           | 12           | 0                 |
|                     | Common brick..   | 9            | 10           | 1                 | Fertilizer.....  | 7.5          | 9            | 1.5               |
|                     | Hay.....         | 12           | 12           | 0                 | Lumber.....      | 12           | 10           | 2*                |
| Natchez, Miss....   |                  |              |              |                   | Potatoes.....    | 12           | 12           | 0                 |
|                     | Oats.....        | 8            | 9            | 1                 | Flour.....       | 8            | 9            | 1                 |
|                     | Grain products.. | 8            | 9            | 1                 | Corn.....        | 8            | 9            | 1                 |
|                     | Cured meats...   | 12           | 18           | 6                 | Manufactured     |              |              |                   |
|                     | Hay.....         | 12           | 12           | 0                 | iron.....        | 12           | 12           | 0                 |
|                     | Potatoes.....    | 12           | 12           | 0                 | Common brick..   | 8            | 10           | 2                 |
| Baton Rouge, La...  | Machinery.....   | 11           | 17           | 6                 | Hardware.....    | 11           | 17           | 6                 |
|                     |                  |              |              |                   | Agricultural     |              |              |                   |
|                     |                  |              |              |                   | implements...    | 11           | 17           | 6                 |
|                     | Manufactured     |              |              |                   | Grain products.. | 8            | 9            | 1                 |
|                     | iron.....        | 12           | 12           | 0                 | Flour.....       | 8            | 9            | 1                 |
|                     | Petroleum.....   | 12           | 17           | 5                 | Oats.....        | 8            | 9            | 1                 |
| New Orleans, La...  | Corn.....        | 8            | 9            | 1                 | Machinery.....   | 11           | 17           | 6                 |
|                     | Cured meats...   | 12           | 18           | 6                 | Fertilizer.....  | 7.5          | 10           | 2.5               |
|                     | Potatoes.....    | 12           | 12           | 0                 | Hay.....         | 12           | 12           | 0                 |
|                     | Salt.....        | 7            | 9            | 2                 |                  |              |              |                   |
|                     | Cotton.....      | 15           | 20           | 5                 | Lumber.....      | 11           | 12           | 1                 |
|                     | Flour.....       | 8            | 9            | 1                 | Corn.....        | 8            | 9            | 1                 |
| New Orleans, La...  | Cured meats...   | 12           | 18           | 6                 | Wheat.....       | 8            | 12           | 4                 |
|                     | Oats.....        | 8            | 9            | 1                 | Grain products.. | 9            | 8            | 1*                |
|                     | Common brick..   | 8            | 10           | 2                 | Potatoes.....    | 12           | 12           | 0                 |
|                     | Hay.....         | 12           | 12           | 0                 | Hardware.....    | 11           | 17           | 6                 |

\* The rail rates are lower than the boat rates.

of lading on large amounts of cotton. The larger part of the cotton is shipped on a through rate from the farm to the point of destination, a northern mill, or a seaport. The through rate allows



TABLE XXV—Continued

SECTION 6. RATES SOUTHWARD FROM GREENVILLE, VICKSBURG, NATCHEZ,  
AND BATON ROUGE

| From Greenville, Miss., to                        | Commodity            | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity                      | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|---|----------------------|--------------|--------------|-------------------|--------------------------------|--------------|--------------|-------------------|
| Vicksburg, Miss. . . . .                          | Cotton-seed meal     | 12           | 10           | 2*                | Cotton-seed hulls              | 12           | 10           | 2*                |
|   | Wheat . . . . .      | 8            | 5            | 3*                | Grain products . .             | 8            | 5            | 3*                |
|   | Ice . . . . .        | 9            | 10           | 1                 | Cotton . . . . .               | 15           | 15           | 0                 |
|   | Cattle . . . . .     | 11           | 13           | 2                 | Vehicles . . . . .             | 23           | 32           | 9                 |
|   | Lumber . . . . .     | 11           | 6            | 5*                | Coal . . . . .                 | 9            | 6            | 3*                |
|   | Common brick . .     | 9            | 4            | 5*                |                                |              |              |                   |
| Baton Rouge, La.<br>and Natchez,<br>Miss. . . . . | Cotton seed . . . .  | 8            | 10           | 2                 | Machinery . . . .              | 11           | 17           | 6                 |
|   | Cotton-seed hulls    | 8            | 10           | 2                 | Cotton-seed meal               | 12           | 10           | 2*                |
| New Orleans, La. . .                              | Cotton . . . . .     | 15           | 20           | 5                 | Cotton-seed meal               | 12           | 10           | 2*                |
|   | Cotton-seed hulls    | 8            | 11           | 3                 | Lumber . . . . .               | 11           | 11           | 0                 |
|   | Cotton oil . . . . . | 11           | 17           | 6                 | Grain products . .             | 8            | 12           | 4                 |
| From Vicksburg, Miss., to                         |                      |              |              |                   |                                |              |              |                   |
| Natchez, Miss. . . . .                            | Cured meats . . .    | 15           | 18           | 3                 | Cotton-seed meal               | 8            | 10           | 2                 |
|   | Cotton-seed hulls    | 8            | 10           | 2                 | Hardware . . . . .             | 18           | 25           | 7                 |
|   | Grain products . .   | 8            | 12           | 4                 | Manufactured<br>iron . . . . . | 8            | 12           | 4                 |
|   | Potatoes . . . . .   | 11           | 14           | 3                 |                                |              |              |                   |
| Baton Rouge, La. . .                              | Cured meats . . .    | 15           | 18           | 3                 | Hay . . . . .                  | 12           | 12           | 0                 |
|   | Cotton-seed meal     | 8            | 10           | 2                 | Cotton-seed hulls              | 8            | 10           | 2                 |
|   | Lumber . . . . .     | 11           | 9            | 2*                | Hardware . . . . .             | 18           | 25           | 7                 |
| New Orleans, La. . . .                            | Cotton . . . . .     | 15           | 17           | 2                 | Lumber . . . . .               | 11           | 10           | 1*                |
|   | Cotton-seed meal     | 8            | 9            | 1                 | Cotton-seed hulls              | 8            | 9            | 1                 |
|   | Cattle . . . . .     | 20           | 13           | 7*                | Cotton seed . . . .            | 8            | 9            | 1                 |
|   | Coke . . . . .       | 15           | 15           | 0                 | Hay . . . . .                  | 12           | 12           | 0                 |
|   | Grain products . .   | 8            | 12           | 4                 | Cotton oil . . . . .           | 12           | 15           | 3                 |
|   | Coal . . . . .       | 15           | 15           | 0                 | Cured meats . . .              | 15           | 18           | 3                 |
| From Natchez, Miss., to                           |                      |              |              |                   |                                |              |              |                   |
| Baton Rouge, La. . . . .                          | Cotton-seed meal     | 8            | 10           | 2                 | Cotton-seed hulls              | 10           | 10           | 0                 |
|   | Cotton . . . . .     | 15           | 16           | 1                 | Cotton-seed meal               | 8            | 9            | 1                 |
| New Orleans, La. . . .                            | Cotton-seed hulls    | 8            | 9            | 1                 | Cotton oil . . . . .           | 12           | 15           | 3                 |
|   | Lumber . . . . .     | 11           | 11           | 0                 | Cattle . . . . .               | 20           | 13           | 7*                |
|   | Sand . . . . .       | 8            | 8            | 0                 | Vegetables . . . .             | 11           | 15           | 4                 |
|   | Hardware . . . . .   | 18           | 25           | 7                 | Oats . . . . .                 | 8            | 12           | 4                 |
| From Baton Rouge, La., to                         |                      |              |              |                   |                                |              |              |                   |
| New Orleans, La. . . .                            | Sand . . . . .       | 8            | 2            | 6*                | Gravel . . . . .               | 8            | 2            | 6*                |
|   | Corn . . . . .       | 8            | 8            | 0                 | Lumber . . . . .               | 11           | 7            | 4*                |
|   | Cotton . . . . .     | 10           | 10           | 0                 | Brick . . . . .                | 7            | 3            | 4*                |
|   | Cement . . . . .     | 7            | 6            | 1*                | Cotton-seed meal               | 8            | 8            | 0                 |
|   | Cotton-seed hulls    | 8            | 5            | 3*                | Wheat . . . . .                | 8            | 8            | 0                 |
|   | Grain products . .   | 8            | 8            | 0                 | Manufactured<br>iron . . . . . | 11           | 12           | 1                 |
|   | Cotton seed . . . .  | 8            | 9            | 1                 |                                |              |              |                   |

\* The rail rates are lower than the boat rates.

compressing en route and is usually lower than a combination of the locals. The case of the planter above is discussed because he is favorably located for river shipping. The planter whose farm is not situated immediately outside the levee, or is located between landings, even on the levee, has still more to lose by shipping by river. With the present rail service and rates, no wide territory in the Mississippi Valley can be served by a waterway, regardless of depth. The present shipping is largely confined to the strip within the levees, and for local shipping 30 feet of water would not increase the economy of shipping on the river.

The traffic agent of a boat company at Greenville stated to the writer that the freight business near Greenville was confined to the traffic within the levees. He said that the farmers could not be blamed for not hauling their produce over the levee inasmuch as the railroads were located immediately outside, and carried freight at the same rates as the boat companies did.

The traffic managers of the packet lines on the Mississippi are a unit in their conviction that an increase in the depth of the channel with the present rail rates would give them no aid. They point out that they cannot get the freight to carry. One manager stated that he formerly carried cement, but that a wagon haul was necessary, and that the managers of the plants now inform him that the railways have laid spurs to their plants, and that they can no longer give him the business. The same boat manager said to the writer that there were certain firms in St. Louis which received freight from his line, and that they were shipping important amounts of freight to a point on his line, but that the officials had informed him that they could not ship by boat even if there were no charge. The drayage, the insurance, and the damage from handling would have been more than the rail rate.

It is interesting to note in Section 7 of Table XXV the commodities that are shipped in largest amounts from New Orleans to Chicago, and the rates. First appears lumber, which is shipped by rail at the local rate of 24 cents. The origin of the larger part of it is in Louisiana west of the Mississippi. Not a foot of this commodity is shipped by river to Memphis or St. Louis; hence it is

improbable that it could be shipped beyond these points and through a combined canal and river channel from St. Louis to Chicago.

TABLE XXV—*Continued*  
SECTION 7. RATES NORTHWARD FROM NEW ORLEANS

| To                 | Commodity          | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity        | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|--------------------|--------------------|--------------|--------------|-------------------|------------------|--------------|--------------|-------------------|
| Baton Rouge, La..  | Manufactured       |              |              |                   | Petroleum.....   | 12           | 12           | 0                 |
|                    | iron .....         | 11           | 12           | 1                 | Fertilizer.....  | 7.5          | 10           | 2.5               |
|                    | Lumber.....        | 11           | 7            | 4*                | Machinery.....   | 11           | 12           | 1                 |
|                    | Salt.....          | 8            | 8            | 0                 | Fresh meats....  | 12           | 18           | 6                 |
|                    | Cured meats ..     | 12           | 10           | 2*                | Grain products . | 8            | 8            | 0                 |
|                    | Sugar.....         | 8            | 10           | 2                 |                  |              |              |                   |
| Natchez, Miss....  | Molasses.....      | 8            | 10           | 2                 | Petroleum.....   | 12           | 12           | 0                 |
|                    |                    |              |              |                   | Salt.....        | 7            | 9            | 2                 |
|                    | Petroleum.....     | 12           | 12           | 0                 | Fertilizer.....  | 7.5          | 10           | 2.5               |
|                    | Sugar.....         | 8            | 10           | 2                 | Oranges.....     | 25           | 25           | 0                 |
|                    | Bananas.....       | 25           | 25           | 0                 | Lard.....        | 15           | 18           | 3                 |
|                    | Cured meats ..     | 15           | 18           | 3                 | Beer.....        | 10           | 15           | 5                 |
| Vicksburg, Miss..  | Fresh meats....    | 25           | 25           | 0                 | Brick.....       | 7            | 10           | 3                 |
|                    | Lime.....          | 7            | 10           | 3                 | Machinery.....   | 11           | 17           | 6                 |
|                    | Coffee.....        | 11           | 17           | 6                 |                  |              |              |                   |
|                    | Petroleum.....     | 11           | 14           | 3                 | Sugar.....       | 7            | 10           | 3                 |
|                    | Salt.....          | 8            | 9            | 1                 | Bananas.....     | 25           | 25           | 0                 |
|                    | Molasses.....      | 8            | 10           | 2                 | Hardware.....    | 18           | 25           | 7                 |
| Greenville, Miss.. | Dry goods.....     | 50           | 45           | 5*                | Cured meats....  | 15           | 18           | 3                 |
|                    | Domestic fruits..  | 20           | 30           | 10                | Vegetables.....  | 18           | 25           | 7                 |
|                    | Rice.....          | 8            | 10           | 2                 | Lumber.....      | 11           | 10           | 1*                |
|                    | Petroleum.....     | 11           | 14           | 3                 | Sugar.....       | 7            | 10           | 3                 |
|                    | Hardware.....      | 11           | 17           | 6                 | Cotton piece     |              |              |                   |
|                    | Salt.....          | 8            | 9            | 1                 | goods.....       | 18           | 25           | 7                 |
| Memphis, Tenn...   | Syrup.....         | 8            | 10           | 2                 | Bananas.....     | 25           | 25           | 0                 |
|                    | Domestic fruits .. | 20           | 30           | 10                | Cured meats ..   | 12           | 18           | 6                 |
|                    | Rice.....          | 8            | 10           | 2                 | Vegetables.....  | 18           | 25           | 7                 |
|                    | Fresh fish.....    | 15           | 18           | 3                 | Coffee.....      | 11           | 17           | 6                 |
|                    |                    |              |              |                   |                  |              |              |                   |
|                    | Sugar.....         | 8            | 12           | 4                 | Syrup.....       | 8            | 10           | 2                 |
| Cairo, Ill.....    | Bagging.....       | 8            | 10           | 2                 | Lumber.....      | 10           | 12           | 2                 |
|                    | Coffee.....        | 11           | 17           | 6                 | Petroleum.....   | 11           | 14           | 3                 |
|                    | Salt.....          | 8            | 9            | 1                 | Cured meats ..   | 12           | 18           | 6                 |
|                    | Lard compound..    | 10           | 18           | 8                 | Bananas.....     | 35           | 35           | 0                 |
|                    | Cotton oil.....    | †            | 17           | ...               | Oranges.....     | 25           | 25           | 0                 |
|                    |                    |              |              |                   |                  |              |              |                   |
| Cairo, Ill.....    | Lumber.....        | 18           | 14           | 4*                | Sugar.....       | 12           | 17           | 5                 |
|                    | Bananas.....       | 35           | 35           | 0                 | Salt.....        | 10           | 15           | 5                 |
|                    | Green beans.....   | 40           | 61           | 21                | Green peas.....  | 50           | 61           | 11                |
|                    | Oranges.....       | 35           | 35           | 0                 | Sweet potatoes.. | 22           | 32           | 10                |
|                    | Beets.....         | 30           | 50           | 20                | Radishes.....    | 30           | 50           | 20                |
|                    | Squashes.....      | 30           | 50           | 20                | Cabbage.....     | 30           | 34           | 4                 |
| Cairo, Ill.....    | Cauliflower.....   | 22           | 34           | 12                |                  |              |              |                   |
|                    |                    |              |              |                   |                  |              |              |                   |
|                    |                    |              |              |                   |                  |              |              |                   |
|                    |                    |              |              |                   |                  |              |              |                   |
|                    |                    |              |              |                   |                  |              |              |                   |
|                    |                    |              |              |                   |                  |              |              |                   |

\* The rail rates are lower than the boat rates.

† No rates in effect by river.

TABLE XXV—*Continued*SECTION 7.—*Continued.* RATES NORTHWARD FROM NEW ORLEANS

| To                  | Commodity          | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|---------------------|--------------------|--------------|--------------|-------------------|-------------------|--------------|--------------|-------------------|
| St. Louis, Mo. ...  | Sugar .....        | 12           | 17           | 5                 | Lumber .....      | 22           | 18           | 4*                |
|                     | Salt .....         | 10           | 15           | 5                 | Bananas .....     | †            | 43           | ....              |
|                     | Coffee .....       | 18           | 23           | 5                 | Sisal .....       | 12           | 15           | 3                 |
|                     | Bagging .....      | 11           | 14           | 3                 | Rice .....        | 17           | 24           | 7                 |
|                     | Manufactured       |              |              |                   | Fertilizer .....  | 11           | 15           | 4                 |
|                     | iron .....         | 16           | 21           | 5                 | Cotton oil .....  | 18           | 22           | 4                 |
|                     | Cotton-seed meal   | 14           | 19           | 5                 |                   |              |              |                   |
|                     | Nitrate of soda .. | 10           | 15           | 5                 |                   |              |              |                   |
| Peoria, Ill.† ..... | Lumber .....       | ...          | 23           | ...               | Bananas .....     | ...          | 46           | ....              |
|                     | Sisal .....        | ...          | 18           | ...               | Sugar .....       | ...          | 23           | ....              |
|                     | Coffee .....       | ...          | 25           | ...               | Salt .....        | ...          | 19           | ....              |
|                     | Rice .....         | ...          | 30           | ...               | Sweet potatoes .. | ...          | 32           | ....              |
|                     | Syrup .....        | ...          | 27           | ...               | Rosin .....       | ...          | 20           | ....              |
|                     | Turpentine .....   | ...          | 31           | ...               |                   |              |              |                   |
| Chicago, Ill.† .... | Lumber .....       | ...          | 24           | ...               | Sugar .....       | ...          | 23           | ....              |
|                     | Coffee .....       | ...          | 25           | ...               | Bananas .....     | ...          | 48           | ....              |
|                     | Oranges .....      | ...          | 46           | ...               | Syrup .....       | ...          | 27           | ....              |
|                     | Rice .....         | ...          | 30           | ...               | Cotton oil .....  | ...          | 27           | ....              |
|                     | Manufactured       |              |              |                   | Cotton-seed meal  | ...          | 23           | ....              |
|                     | iron .....         | ...          | 25           | ...               | Potatoes .....    | ...          | 40           | ....              |
|                     | Cotton-seed hulls  | ...          | 23           | ...               |                   |              |              |                   |

\* The rail rates are lower than the boat rates.

† No rates in effect by river.

A certain amount of coffee was last year carried to St. Louis by boat at 18 cents, and this is probably the freight that is most available for river traffic between these points. Coffee is received on the wharf at New Orleans and is delivered to the coffee merchants at St. Louis located only two blocks from the wharf. Oranges and bananas, of course, could not be carried on boats for long distances. Rice could not be obtained easily for boats as it is shipped from the fields to destination. Sugar, which is manufactured at New Orleans, would seem to be as available as coffee, except that the rate is less. The difficulty that the American Sugar Refinery met a few years ago, when it attempted to make regular shipments of sugar to St. Louis, was that the revenue was not enough to pay the cost of pulling the barge up stream for a thousand miles. The rail rate is 17 cents and the boat rate last year was 12 cents. The first barge load received at St. Louis from New Orleans in 1911

TABLE XXV—*Continued*

## SECTION 8. RATES NORTHWARD FROM BATON ROUGE, NATCHEZ, VICKSBURG, AND GREENVILLE

| From Baton Rouge to       | Commodity         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|---------------------------|-------------------|--------------|--------------|-------------------|-------------------|--------------|--------------|-------------------|
| Natchez, Miss. .... }     | Sugar .....       | 8            | 10           | 2                 | Molasses .....    | 8            | 10           | 2                 |
|                           | Rice .....        | 7            | 10           | 3                 | Petroleum .....   | 8            | 6            | 2*                |
| Vicksburg, Miss. .... }   | Molasses .....    | 8            | 10           | 2                 | Lumber .....      | 11           | 12           | 1                 |
|                           | Rice .....        | 7            | 9            | 2                 | Petroleum .....   | 8            | 6            | 2*                |
| Memphis, Tenn. .... }     | Lumber .....      | 11           | 7            | 4*                | Syrup .....       | 8            | 10           | 2                 |
| Cairo, Ill. .... }        | Horses .....      | †            | 13           | ...               | Household goods   | 13           | 17           | 4                 |
|                           | Lumber .....      | †            | 13           | ...               |                   |              |              |                   |
| St. Louis, Mo. .... }     | Lumber .....      | †            | 18           | ...               | Sugar .....       | 12           | 17           | 5                 |
|                           | Syrup .....       | 12           | 21           | 9                 |                   |              |              |                   |
| Peoria, Ill. .... }       | Lumber .....      | †            | 23           | ...               |                   |              |              |                   |
| Chicago, Ill. † .... }    | Lumber .....      | ...          | 24           | ...               | Scrap iron .....  | 11           | ...          | ...               |
|                           | Cotton-seed meal  | ...          | 23           | ...               | Cotton-seed hulls | 23           | ...          | ...               |
|                           | Sugar .....       | ...          | 23           | ...               | Molasses .....    | 27           | ...          | ...               |
| From Natchez, Miss., to   |                   |              |              |                   |                   |              |              |                   |
| Vicksburg, Miss. .... }   | Cotton-seed meal  | 8            | 10           | 2                 | Cotton-seed hulls | 8            | 10           | 2                 |
|                           | Corn .....        | 8            | 5            | 3*                |                   |              |              |                   |
| Greenville, Miss. .... }  | Horses .....      | †            | 13           | ...               |                   |              |              |                   |
| Memphis, Tenn. .... }     | Lumber .....      | 11           | 8            | 3*                | Cotton oil .....  | 12           | 17           | 5                 |
|                           | Potatoes .....    | 12           | 12           | 0                 |                   |              |              |                   |
| Cairo, Ill. .... }        | Lumber .....      | 13†          | 13           | 0                 |                   |              |              |                   |
| St. Louis, Mo. .... }     | Lumber .....      | 17           | 16           | 1*                | Cattle .....      | †            | 19           | ...               |
|                           | Cotton-seed meal  | 12           | 15           | 3                 | Cotton-seed hulls | 12           | 15           | 3                 |
| Chicago, Ill. † .... }    | Cotton oil .....  | ...          | 20           | ...               | Lumber .....      | 21           | ...          | ...               |
| Peoria, Ill. † .... }     | Potatoes .....    | ...          | 35           | ...               |                   |              |              |                   |
|                           | Lumber .....      | ...          | 22           | ...               |                   |              |              |                   |
| From Vicksburg, Miss., to |                   |              |              |                   |                   |              |              |                   |
| Greenville, Miss. .... }  | Cured meats ....  | 10           | 18           | 8                 | Fresh meats ....  | 18           | 25           | 7                 |
|                           | Lumber .....      | 10           | 6            | 4*                | Manufactured      |              |              |                   |
|                           | Petroleum .....   | 11           | 14           | 3                 | iron .....        | 12           | 12           | 0                 |
| Memphis, Tenn. .... }     | Lumber .....      | 10           | 8            | 2*                | Cotton oil .....  | 12           | 17           | 5                 |
|                           | Manufactured      |              |              |                   | Cotton .....      | 18           | 20           | 2                 |
|                           | iron .....        | 12           | 12           | 0                 | Lard compound     | 10           | 15           | 5                 |
| Cairo, Ill. .... }        | Machinery .....   | 11           | 17           | 6                 |                   |              |              |                   |
|                           | Lumber .....      | 12           | 13           | 1                 |                   |              |              |                   |
| St. Louis, Mo. .... }     | Lumber .....      | 12           | 15           | 3                 | Scrap iron .....  | 10           | 11           | 1                 |
|                           | Cotton .....      | 20           | 30           | 10                | Cotton-seed meal  | 10           | 15           | 5                 |
| Peoria, Ill. .... }       | Cotton-seed hulls | 14           | 19           | 5                 | Dry goods .....   | 60           | 90           | 30                |
|                           | Lumber .....      | ...          | 21           | ...               |                   |              |              |                   |

\* The rail rates are lower than the boat rates.

† No rates in effect by river.

‡ This rate is \$4 per thousand feet by barge but is equal to 13 cents a hundred.

TABLE XXV—*Continued*SECTION 8.—*Continued.* RATES NORTHWARD FROM BATON ROUGE, NATCHEZ, VICKSBURG, AND GREENVILLE

| From Greenville, Miss., to | Commodity        | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|----------------------------|------------------|--------------|--------------|-------------------|-------------------|--------------|--------------|-------------------|
| Memphis, Tenn. ....        | Lumber .....     | 11           | 7            | 4*                | Cotton .....      | 17           | 17           | 0                 |
|                            | Cotton-seed meal | 8            | 8            | 0                 | Cotton-seed hulls | 8            | 8            | 0                 |
|                            | Cotton oil ..... | 12           | 17           | 5                 | Naval stores .... | 12           | 17           | 5                 |
| Cairo, Ill. ....           | Lumber .....     | 12           | 13           | 1                 | Cotton oil .....  | 15           | 22           | 7                 |
| St. Louis, Mo. ....        | Lumber .....     | 12           | 15           | 3                 |                   |              |              |                   |
| Peoria, Ill. † .....       | Lumber .....     | ...          | 21           | ...               |                   |              |              |                   |
| Chicago, Ill. † .....      | Lumber .....     | ...          | 21           | ...               | Cotton oil .....  | ...          | 27           | ...               |
|                            | Cotton-seed meal | ...          | 18           | ...               | Cotton-seed hulls | ...          | 18           | ...               |
|                            | Sugar .....      | ...          | 47           | ...               | Scrap iron .....  | ...          | 17           | ...               |

\* The rail rates are lower than the boat rates.

† No rates in effect by river.

consisted of more than a thousand tons of sugar. A commodity that is imported and shipped by rail from New Orleans to St. Louis and Chicago is sisal. It moves at 15 cents to St. Louis and 18 to Chicago. These rates are equivalent, roughly, to 3 mills per ton mile by rail, or less than 2 mills by the proposed waterway. It appears to the writer that these rates are so low that boats cannot carry this freight. The governor of Michigan<sup>1</sup> recently made a strong plea before the Waterway Association for a waterway that would bring sisal to the farmer at a low freight rate. The rail rate to Jackson, Mich., is 23 cents from New Orleans. The insurance would be at least 3 cents a hundred pounds, if shipment were by boat; and the local rail rate from Chicago to Jackson, Mich., is 12 cents. There would be left for the boat rate from New Orleans to Chicago, 1,600 miles, only 8 cents per hundred pounds. The boats could not carry this commodity for that distance up stream, if the depth of the channel were unlimited, for that rate.<sup>2</sup>

These examples might be increased in number, but it is believed that they are sufficient. They indicate some of the conditions of

<sup>1</sup> Governor Warner said: "I believe the freight rate on that [sisal] alone would be cut in two if we could send that by boat even as far as St. Louis."

<sup>2</sup> The rate of 12 cents is the class rate for carloads. If a commodity rate as low as 7 cents for the distance of 209 miles should be made, the rate accruing to the boat line including both terminal charges would be only 13 cents for 1,600 miles or 1 $\frac{2}{3}$  mills per ton-mile.

shipping that make the railways more efficient than boats. The writer has been led to ask how the traffic managers of the boat companies obtain the small amount of freight now shipped by boat, rather than why the river traffic has declined. The answer to this question is that there is a limited amount of boat business for which the railways cannot compete. That is, at least one of the termini of the shipment is a point not served by a railway. However, this traffic is decreasing as new lines and feeders are constructed and as plants locate on rail lines and spurs.

TABLE XXV—*Continued*  
SECTION 9. RATES NORTHWARD FROM MEMPHIS AND CAIRO

| From Memphis, Tenn., to  | Commodity                             | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity                      | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|--------------------------|---------------------------------------|--------------|--------------|-------------------|--------------------------------|--------------|--------------|-------------------|
| Cairo, Ill. . . . .      | Lumber. . . . .                       | 10           | 10           | 0                 | Lard compound. . . . .         | 15           | 13           | 2*                |
|                          | Cotton-seed meal . . . . .            | 15           | 9            | 6*                |                                |              |              |                   |
| St. Louis, Mo. . . . .   | Lumber. . . . .                       | 12           | 12           | 0                 | Cotton oil. . . . .            | 10           | 14           | 4                 |
|                          | Cotton-seed meal . . . . .            | 7            | 10           | 3                 | Cotton-seed hulls . . . . .    | 7            | 10           | 3                 |
|                          | Iron pipe . . . . .                   | 19           | 25           | 6                 | Machinery. . . . .             | 18           | 25           | 7                 |
|                          | Cattle. . . . .                       | 18           | 11           | 7*                | Lard compound. . . . .         | 12           | 18           | 6                 |
|                          | Cotton. . . . .                       | 10           | 15           | 5                 | Woodenware . . . . .           | 16           | 23           | 7                 |
|                          | Vehicles. . . . .                     | 25           | 35           | 10                |                                |              |              |                   |
| Peoria, Ill.† . . . . .  | Lumber. . . . .                       | 16           | ...          | ...               | Cotton-seed meal . . . . .     | 14           | ...          | ...               |
|                          | Cotton-seed hulls . . . . .           | 13           | ...          | ...               |                                |              |              |                   |
| Chicago, Ill.† . . . . . | Lumber. . . . .                       | 16           | ...          | ...               | Cotton oil. . . . .            | 20           | ...          | ...               |
|                          | Cotton-seed meal . . . . .            | 16           | ...          | ...               | Cotton-seed hulls . . . . .    | 16           | ...          | ...               |
|                          | Manufactured iron . . . . .           | 31           | ...          | ...               | Cured meats . . . . .          | 24           | ...          | ...               |
|                          | Cotton. . . . .                       | 21           | ...          | ...               | Potatoes. . . . .              | 31           | ...          | ...               |
|                          | Agricultural im-<br>plements. . . . . | 31           | ...          | ...               | Cotton piece<br>goods. . . . . | 43           | ...          | ...               |
|                          |                                       |              |              |                   |                                |              |              |                   |
| From Cairo, Ill., to     |                                       |              |              |                   |                                |              |              |                   |
| St. Louis, Mo. . . . .   | Lumber. . . . .                       | 10           | 7            | 3*                | Manufactured iron . . . . .    | 10           | 11           | 1                 |
|                          | Wheat. . . . .                        | 10           | 6            | 4*                |                                |              |              |                   |
| Peoria, Ill.† . . . . .  | Lumber. . . . .                       | 9            | ...          | ...               | Cattle. . . . .                | 15           | 11           | 4*                |
|                          |                                       |              |              |                   |                                |              |              |                   |
| Chicago, Ill.† . . . . . | Lumber. . . . .                       | 10           | ...          | ...               | Cotton oil. . . . .            | 15           | ...          | ...               |
|                          | Potatoes. . . . .                     | 43           | ...          | ...               | Pig iron. . . . .              | 7            | ...          | ...               |
|                          | Poultry. . . . .                      | 31           | ...          | ...               | Machinery. . . . .             | 18           | ...          | ...               |
|                          | Rice. . . . .                         | 19           | ...          | ...               | Manufactured iron . . . . .    | 15           | ...          | ...               |
|                          | Cross ties. . . . .                   | 10           | ...          | ...               | Hides. . . . .                 | 16           | ...          | ...               |

\* The rail rates are lower than the boat rates.

† No through boat rates in effect; combinations of locals are so much higher than the through rail rates that comparison is not necessary.

TABLE XXV—*Continued*

## SECTION 10. RATES NORTHWARD FROM ST. LOUIS AND PEORIA

| From St. Louis, Mo., to | Commodity         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential | Commodity         | Boat<br>Rate | Rail<br>Rate | Differ-<br>ential |
|-------------------------|-------------------|--------------|--------------|-------------------|-------------------|--------------|--------------|-------------------|
| Peoria, Ill. ....       | Lumber. ....      | 10           | 7            | 3*                | Cotton-seed meal  | 15           | 7            | 8*                |
|                         | Cotton-seed hulls | 15           | 7            | 8*                | Rice. ....        | 15           | 15           | 0                 |
|                         | Fruits. ....      | 30           | 10           | 20*               | Brick. ....       | 20           | 8            | 12*               |
|                         | Cement. ....      | 10           | 9            | 1*                | Grain products .  | 10           | 7            | 3*                |
|                         | Water pipe. ....  | 15           | 6            | 9*                |                   |              |              |                   |
| Chicago, Ill. † ....    | Lumber. ....      | ...          | 8            | ...               | Potatoes. ....    | ...          | 12           | ...               |
|                         | Beer. ....        | ...          | 14           | ...               | Hogs. ....        | ...          | 16           | ...               |
|                         | Sugar. ....       | ...          | 10           | ...               | Rice. ....        | ...          | 18           | ...               |
|                         | Lard compound..   | ...          | 10           | ...               | Cement. ....      | ...          | 7            | ...               |
|                         | Lime. ....        | ...          | 11           | ...               | Brick. ....       | ...          | 7            | ...               |
|                         | Cotton. ....      | ...          | 25           | ...               | Rosin. ....       | ...          | 8            | ...               |
|                         | Turpentine. ....  | ...          | 16           | ...               |                   |              |              |                   |
| From Peoria, Ill., to   |                   |              |              |                   |                   |              |              |                   |
| Chicago, Ill. † ....    | Oats. ....        | ...          | 6            | ...               | Beer. ....        | ...          | 12           | ...               |
|                         | Cotton-seed meal  | ...          | 7            | ...               | Cotton-seed hulls | ...          | 7            | ...               |
|                         | Machinery. ....   | ...          | 14           | ...               | Potatoes. ....    | ...          | 10           | ...               |
|                         | Wheat. ....       | ...          | 6            | ...               |                   |              |              |                   |

\* The rail rates are lower than the boat rates.

† No boat rates published.

A comparison of rail rates in the Mississippi Valley with those in foreign countries would make interesting reading to the student of transportation, but it has been deemed beyond the field of this study, and of sufficient importance to justify a separate paper. Documents, numbers 16-22, of the National Waterways Commission of the United States, 1910-11, present valuable material on this subject.

The freight originating at rail points or at points not immediately on the river can be carried more cheaply as well as more satisfactorily by rail in almost every case. Not enough freight can be attracted to the river to enable the boat lines to carry large cargoes; hence no very low cost of transportation is to be attained. The boat lines must handle every ton of freight at both ends of the haul, while the shipper finds it less expensive and more convenient to place his freight in a car on his own spur than to cart it to the boat at scheduled periods. The rail carrier is not required to handle carload freight at either end of the haul. It is clear, then, that here is a saving of no mean significance. When freight of even the lowest grade costs some two or three cents for handling at each terminal, to say nothing of drayage or insurance, it is not difficult to see that it is both cheaper and more convenient to carry low-



grade freight, even local freight, by rail than by water. This is a fact well understood by the old river men but not commonly known. Because the waterway is free to boats, the conclusion that low-grade freight can be carried more cheaply by water under all circumstances is usually reached. But the very best proof that the boat lines cannot carry freight as cheaply as the railways can is that the lines that once carried the freight between the competitive points have been forced to abandon the river because they cannot attract enough freight at rates that will pay the cost of operation plus a reasonable profit.

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### CONCLUSION

The writer has been asked frequently what his conclusions are concerning the Lakes-to-the-Gulf Deep Waterway. Hence an attempt is made here, following the concrete study of the preceding pages, to state briefly the general conclusions that seem to be supported by the evidence already presented.

In the first place, the cost of even a 14-foot waterway is not insignificant. The engineers have estimated a cost of, roughly, \$160,000,000 for the construction of the channel from Joliet to New Orleans and more than \$6,000,000 for annual maintenance. At a very conservative estimate, \$100,000,000 additional would be necessary to complete the channel from Chicago to Joliet, and the maintenance, including the dredging of the channel for sediment deposited from the sewage of Chicago, would probably amount to some three or four million dollars annually. These items would foot up more than a quarter of a billion dollars for construction and approximately \$10,000,000 annually for maintenance. We are accustomed to considering these amounts as insignificant, but if we take one example of what could be done with this amount of money, it will be seen that the amount of value represented is not inconsiderable.

The average capitalized value of American railways is a little less than \$60,000 per mile, and this is usually considered an excessive capitalization. If \$40,000 more be added for the second track,

the value of a mile of double-track railway would be \$100,000. The distance between Chicago and New Orleans is less than 1,000 miles by several of the rail routes. It would thus cost only \$100,000,000 to construct a double-track freight line tapping the important cities on the route. Twenty-five millions of dollars could be expended for freight equipment, the remaining \$125,000,000 could be given to charity, the \$10,000,000 for annual maintenance of the waterway would probably defray the expense of up-keep of both the railway and equipment, and the only cost that the rates for carrying freight on this specially equipped double-track railway would be required to cover would be the cost of operation.

On such a railway, operated by the government for freight service only, could be carried both low-grade and high-grade freight, and the rates could be made almost anything—certainly lower than could be made on a waterway between Chicago and New Orleans. Of course it would not be fair to stockholders of the railways paralleling the route to construct and operate such a railway through the government, but the case serves to illustrate both that \$250,000,000 is an important amount of money, and that the necessity of constructing artificial waterways has passed.

The lower Mississippi River is now a more efficient waterway than could reasonably be constructed between Chicago and New Orleans. The lower river is wide enough to carry barge fleets of any reasonable dimensions, while the several sections of channel contemplated between Chicago and St. Louis could not be used for important barge fleets. Moreover, the speed of vessels other than barges would be much less on the upper route than at present on the lower route. These conditions make the lower river more efficient than the northern section could be made. But even on the lower route, the barge lines have been unable to attract the competitive freight from the rail lines. The Mississippi Valley Transportation Company, to be sure, made an attempt to revive the river traffic between St. Louis and New Orleans in 1911. A tow with a modern steel barge made six round trips and carried more than 10,000 tons of freight; but so far did the company fail to meet expenses that it was forced to go out of operation, even before the end of one season. It may be possible to establish a line that carries through freight

in competition with the railways on the lower river; yet in 1904 the old barge line was forced to give up a long-established traffic, and in 1911 defeat was met by a modern barge line. It is yet to be decided whether a boat line can operate successfully on the lower river carrying freight in competition with the present rail service.

If, then, the more efficient channel of the lower river is of doubtful economic value, why should the American nation construct at a large cost a channel that would be of little or no value? Moreover, in constructing the upper part of the route, an important obstruction to transportation would be effected. Almost all of the hundred bridges spanning this section of the route would require reconstruction to allow for increased width and boat clearance. This burden would fall on the city of Chicago, the municipal railways of Chicago, other steam and electric railways, and the counties along the route that maintain public highways across it. The future construction of electric and other railways in this thickly populated and rapidly growing section would also be retarded by the additional cost for bridges. These are some of the reasons that make the writer believe that it would be a pure economic waste to construct a Lakes-to-the-Gulf Deep Waterway.

In conclusion, if the channel should be used to some extent, and should cause slightly less cost for transportation to certain favored shippers, situated along the route and shipping commodities that could be carried on the waterway, it would even so be questionable social policy for the nation to bear the burden of shipping for a favored class. If the saving were to be equal to the expenditure, and were not to take from vested interests in railways, the project would still be questionable; but if, as the writer believes, the saving to the favored shippers would not be equal to the expenditure, then the policy of taking from the people as a whole to aid a special class is indefensible.

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